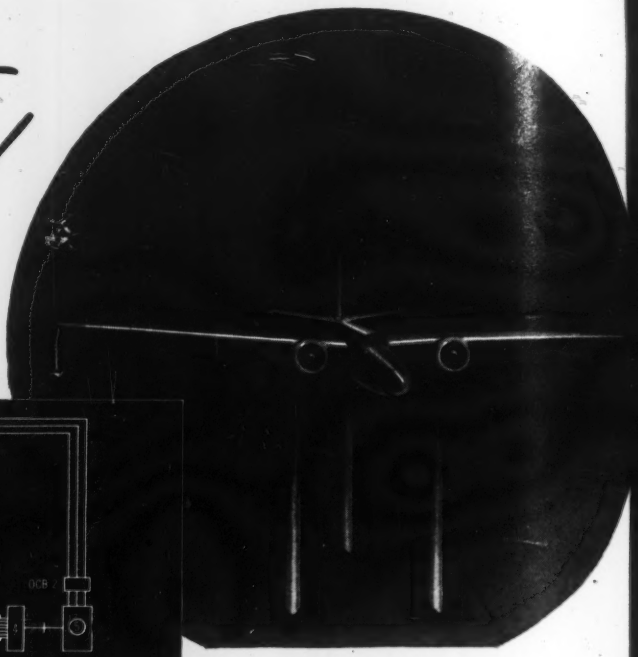
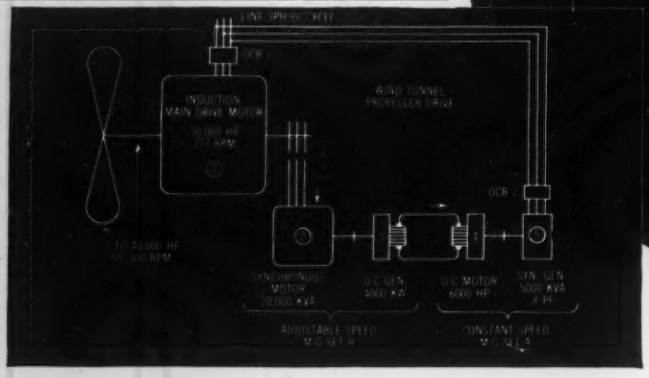
ENGINEERING NEWS-RECORD

Major General
ONALD H. CONNOLLY
Commanding General
ian Gulf Service Command

The Wind Tunnel That Drives A

600 miles per hour!





The story of a powerful fan drive, with accurate speed control, designed for a wind tunnel in which tomorrow's planes will be tested

TODAY dive bombers fly 400 miles per hour, but designers are testing and perfecting planes which will appreciably exceed even this tremendous speed.

These tests could not be carried on, however, in the wind tunnels in existence a short time ago, for they were not large enough, nor did they provide a great enough wind velocity. General Electric engineers were called upon to design new electrical equipment to meet the requirements in larger wind tunnels. They designed a motor of the wound-rotor type, rated 30,000 hp, 327-rpm synchronous speed, to drive the wind tunnel fan blade. It provides a wind velocity of 600 miles per hour, and its speed control is accurate to ¼ of one per cent!

The entire system, of which this motor is a part, is shown in the diagram. Field control of the d-c motors 3 and 4 is employed, and they in turn control the speed of the synchronous motor 2. An increase or decrease in the speed of 2 results in a decrease or increase in the speed of the fan blade. Accurate speed control is thus provided in a fan drive of unprecedented size.

Throwing the Load on the Line

This drive has other interesting features as well. One of them is the method of starting, to ease the tremendous load of a 30,000-hp motor onto the main power line. The constant-speed m-g set A is started, and it in turn starts the adjustable-sp set B. The oil circuit breaker left open. When the m-g set running at a speed of 60-cycles, the main motor 1 is at a stands the latter acts as a transfor Thus, 60-cycle power exists at b sides of the oil circuit breaker, the switch can be closed *with no disturbance at all.*

Recovering Electricity

Also of interest is the saving current made possible by this syst When the main motor operates reduced speeds, the slip energy employed to run the m-g set B, wh this energy is converted to d-c pow This power runs the m-g set where the d-c power is converted a-c power of line frequency and t returned to the incoming line.

By
C. C. CLYMER
Industrial Engineering Department, General Electric Company

This is another example of the a plication of experience and skill General Electric engineers to solve problem created by today's nee We would like to work with you your problems, too. *General Electr Schenectady, N. Y.*

GENERAL ELECTRIC

665-31-8030

The Week In Engineering and Construction

INEERING NEWS-RECORD • DECEMBER 9, 1943 • VOLUME 131 • NUMBER 24

ghway officials foster celerated postwar plans

rtance of having a large amount of highway construc- work ready for contract letting at the end of the war sed at two meetings in Chicago

ters relating to a vast program of y building in the period immedi- following the end of the war occu- he greater part of the time of the l meeting of the American Associ- of State Highway Officials in Chi- Dec. 1–3, and took up a portion of me of the Highway Research Board g that immediately preceded the H.O. convention. Other matters ac- considered by the state highway of- were means for meeting current s shortages of equipment for main- e and snow removal and what ac- o take to minimize the serious dam- ing done to highways by overloaded

New federal-aid formula

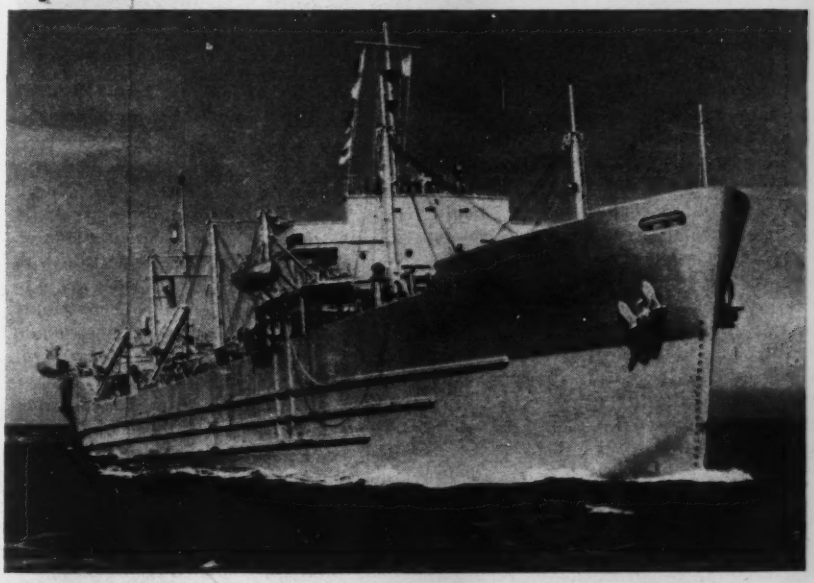
actively discussed in open meetings e subject of much talk in corridors he highly controversial subject of a sed change in the formula by which l aid for state highway construction be apportioned among the states. pending before Congress is a bill ored by the association (H.R. 2426) which the federal government will le one billion dollars annually for ree years immediately following the or postwar highway construction. ill abandons the fifty-fifty matching eral and state funds that has been ect since 1916 and substitutes a ing of one state dollar for each federal dollars. It also apportions oney among the states one half on asis of population, one quarter on and one quarter on post-road mile- instead of giving equal weight to lation, area and post-road mileage s been done since 1916. The 1916 la favored the large state with much milleage; the new formula is de- d to give the smaller states with populations more equitable treat- . It still is not acceptable to some e latter states.

Problems now being faced by the state highway departments were ably summarized by Brady Gentry, president of the A.A.S.H.O in opening the convention. The chief physical problems are those concerned with amplifying maintenance work sufficiently to make up for the needed construction that has been deferred due to the war. Maintenance now involves expenditures double those of prewar days, and this in a time of declining income.

Much of Mr. Gentry's address was directed toward questions that have been raised in connection with the legislation now before Congress to provide funds for postwar road work, chiefly those relating to the total amount the federal government is asked to contribute under H.R. 2426, the manner in which federal funds are to be matched by the states and the formula under which it is proposed to apportion the funds among the states.

As to the proposed federal contribution of one billion dollars for each of three years, Mr. Gentry said he does not think

(*Continued on following page*)



First of concrete ships sails on maiden voyage

Although a number of the large concrete barges built to ship lines are in service, it was only late last month that the first self-propelled concrete boat of this war took to the water. Named the David O. Saylor for the man who first manufactured portland cement in this country, the ship was built in the basins of the Tampa yard of McCloskey & Co. (ENR July 15, 1943, p. 152) for the Maritime Commission, and turned over to the Lykes Bros. Steamship Co. for operation. Twenty-three similar ships are in the McCloskey contract, and, to date, nine other hulls have been floated out of the basins for outfitting. Of these, one named the Vitruvius, after Augustus Caesar's concrete expert, is about ready for delivery.

The concrete ships are 366 ft. long overall, 54 ft. beam, 35 ft. deep, and have a draft of 26 ft. at a displacement of 10,920 long tons, of which 4,400 tons is useful load-carrrying capacity. Hull thickness is 6½ in. The Saylor's concrete is made with Heydite burned clay aggregate, but the other ships are being built with Nodulite, a nodulized burned fullers earth product that provides a concrete weighing 113 to 117 lb. per cu. ft. McCloskey's project manager on the job is Neal A. Melick, while Jacob J. Creskoff is regional vice president.

this is too large an amount for the federal government to spend on highways in view of the fact that the public spend $15 billion a year on motor vehicles, fuel, and gasoline and motor vehicle taxes. In former years, he said, the federal government contributed only one-fifth of the total spent on roads by all public agencies. A survey recently conducted by the A.A.S.H.O. shows that $11 billion will be needed at the end of the war to offset urgent deficiencies. Under current restrictions, few states are able to accumulate any reserves to meet these deficiencies.

Larger federal contributions

As to the controversy over asking the federal government to provide $3 for each $1 provided by the states, Mr. Gentry said that a higher rate of matching would make it impossible for some states to carry out as large a program as will be required by postwar highway needs. Some true friends, he added, fear that a higher federal contribution will result in a demand by the federal government for full control over expenditure of the money. He has no such fears. His chief fear is that if the states do not succeed in agreeing on a program that will produce an adequate highway system after the war the motorists will insist that the federal government step in and take over road building.

Mr. Gentry's chief worry about the underground controversy over the formula for apportioning the federal money is that it may result in a failure to persuade Congress to pass *any* bill for postwar highway building. This, he said, would be a major calamity as it would not only deprive the nation of badly needed highway reconstruction and expansion but also would make it impossible for the highway building industry to contribute its full share to the postwar readjustment of the national economy. In recognition of this possibility, he urged the highway officials to compromise their differences and get behind the legislation.

Kennedy honored

G. Donald Kennedy, vice president of the Automotive Safety Foundation, former highway commissioner of Michigan and past president of the association, was awarded a certificate of appreciation of his services at the conclusion of President Gentry's address. In accepting the certificate, Mr. Kennedy impressed on the members the need for intense activity in the preparation of plans and specifications for postwar work to insure that they are ready when the need for them comes.

The overall picture of postwar public works was presented by Major General Philip B. Fleming, administrator of the Federal Works Agency. The federal government has in prospect about $7 billion worth of construction, but little of this has been completely planned, he said. Only $600 million could be put into operation during the first year after the war.

In addition to the federal work and the construction and deferred maintenance of

S. C. Hadden of Indiana: new president of the highway officials' association

the state highway departments, there is a vast amount of city streets, public buildings, sewage disposal and water-supply work to be done, said General Fleming. Our principal concern in connection with this program is to see that it is put into action at a time when it will contribute most to postwar recovery. "Construction usually helps to intensify a boom. Our problem is to reverse the historic tendency; to get construction started in time to head off any danger of a depression." Back in the late 20's the dollar volume of construction ran to around $11 billion and provided labor for between two and three million people at the site and two and one-half times the number in production, processing and transportation. If we could get that much construction under way immediately following the war it would not solve all our problems, but it could be the very factor needed to prevent employment from spiraling down into a depression. According to the Bureau of Labor Statistics, 14½ million people will have to be adjusted in new jobs if the war should end within a year.

"The public-work[s] program I [advo]cate," said General Fleming, "would for the short run, to hold employ[ment] steady after demobilization while pr[ivate] industry is getting set to resume its [tra]ditional role as employer and provi[der] of the people. It cannot fulfill that unless government—federal, state local—has its detailed plans ready [by] the war ends."

Work for one million men

Responsibility for providing work one million men immediately follo[wing] the war rests on the shoulders of highway engineers, said J. W. Robi[nson] chairman of the House Committee Public Roads. This means that pl[ans] specifications and construction contr[acts] must be ready before the end of the That there is a serious lag in this pl[an]ning is indicated by records of the [Pub]lic Roads Administration, according Mr. Robinson, hence he recommen that some of the engineering be far[med] out if the state highway departm[ents] cannot handle it.

Mr. Robinson said further that if $1 billion of federal funds per year ca[n be] for in legislation now before Congres added to the state contributions for work and to the cost of their maintena[nce] work, there will be a minimum of billion to be expended annually. This said, means that the state highway partments will have to do *four times much highway construction* each year three years as they ever accomplishe[d] one year in our history.

City access roads

In one major particular, said Mr. R[obi]nson, the postwar planning should m[ake] a definite change in American highw[ay] progress. Highway needs are chang[ing] from all-weather communication lines those of providing transportation li[nes] capable of handling large volumes traffic. It is these lines that provide fu[ture] for continued highway construction. T[his] means that increased attention must given to highways leading into the he[art] of our cities. Transcontinental traffic negligible; most of our traffic is shu[ttle] service for one or two hundred miles and around our cities. "The urban must be done. If you do not cooperate doing it, the cities will find a way of passing you and doing the job some ot[her] way." This, Mr. Robinson said, wo[uld] destroy the integrated highway syst[em] toward which the nation has been work[ing] for a long time. This, he added, would very unfortunate.

(*Continued on page 9*)

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,S. Chamber of Commerce offers postwar building program

esident Johnston makes five suggestions to Congress regarding blic works, but thinks construction industry should not be expected stabilize our whole economy

ic A. Johnston, president of the ed States Chamber of Commerce, in mony Dec. 1 before the House Com- e on Public Buildings and Grounds, cated early action by Congress on a y respecting the position of the con- tion industry and public works in ost-war program.

. Johnston favored adoption of a y making clear to the country the wing principles:

That Congress looks to the con- tion industry to eliminate its own s and valleys so far as possible and at way to make its own contribution oviding useful employment, and does xpect that industry to stabilize our e economy.

That Congress expects the city, y and state governments to finance own ordinary local public works, as water systems, street improve- s, educational buildings and recre- al facilities.

That the federal government will late its own proper public works nditures through a suitable agency, der that there may be certainty in d to what the federal government is to do, and elimination of wasteful nditures.

That the federal government's pub- orks will be undertaken through the act method of public construction.

That the federal government will ndertake any activities in the field of housing which will compete with private builders or interfere with the community's responsibility for the enforcement of minimum housing standards and the relief of needy families."

Mr. Johnston said that to make such a public policy on construction realistic Congress should make suitable changes in tax laws with a view to the encouragement of private investment and reconversion to peacetime operations. Revision of the tax structure, he said, also should be designed to make available additional sources of revenue for state and local governmental use, thus helping to free the states and municipalities from dependence upon the federal government.

• • •

Reclamation engineers get awards of excellence

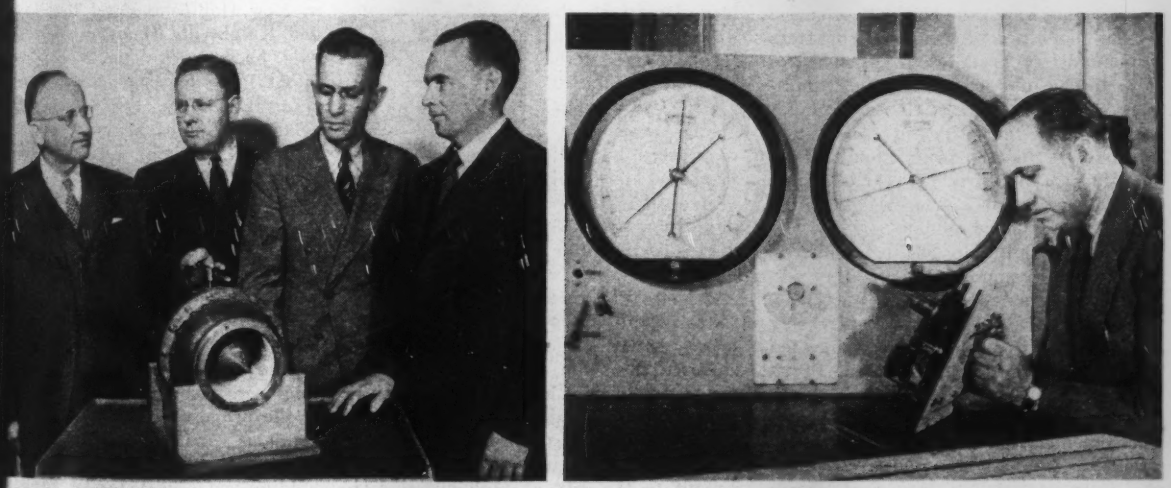
Five engineers of the Bureau of Reclamation's Denver office are the first to receive Awards of Excellence presented by the Department of the Interior. The awards were made "for ingenuity, efficiency, and inventive talents displayed in the government service." They were given under a suggestion and award system which the department has established as a means of improving government service, and were presented at Denver by Assistant Secretary of the Interior Oscar L. Chapman.

Robert F. Blanks, senior engineer in the materials, testing and control section, and employed by the bureau since 1930, is responsible for the invention of equipment for improving accuracy and uniformity in testing the strength of materials. A patent on the Blanks device was granted last April, and was assigned to a testing machine manufacturer for $1, with the government getting royalty-free use. The device is not only necessary for the bureau's testing, which involves many sizes of test specimens, but has also become standard equipment on other materials-testing machines.

Philip A. Kinzie, senior engineer, and Byron H. Staats, engineer, both in the electrical and mechanical designing section of the bureau and Jacob E. Warnock, engineer, and Frank C. Lowe, assistant, both of the materials, testing, and control section, received the award for improving the design of large needle valves by eliminating cavitating pressures and their destructive effects; the result was achieved by altering the contours of the valve ports.

An award also was made to Sylvester C. Bohe, senior carpenter, for his invention of an adjustable bench clamp. William A. Helling, foreman of shops, was given honorable mention for his work in substitution to conserve critical materials. By constructing hydraulic-model forms and concrete forms of wood and coating them with coal-tar compounds, approximately 3,000 lb. of sheet steel were saved during 1942, the bureau announced.

Secretary of the Interior Ickes has submitted a bill to Congress authorizing payment of cash rewards not to exceed $1,000 to any Interior employee during any fiscal year, with total awards for the year not to exceed $20,000. Pending its consideration, persons receiving awards may have their effort rewarded by means of promotions.



reau of Reclamation engineers who received awards for "inventive talents." Left to right: Philip A. Kinzie, Jacob E. Warnock, Byron H. Staats, and Frank C. Lowe. In the picture at the right is Robert F. Blanks.

Army engineers discuss utilities and upkeep

Army engineers from nine Service Commands in the United States and headquarters of the Northwest Service Command in Canada exchanged ideas on techniques and procedures pertaining to utilities operation and preventive maintenance at a three-day conference in Dallas, Tex., Nov. 19-21.

Headquarters Eighth Service Command played host as the housekeeping problems at Army posts and camps throughout the country were discussed by repairs and utilities branch chiefs and section heads from the Service Commands and the office of the Chief of Engineers. Joining in the forum were officers from War Department, Army Service Forces and Army Air Forces headquarters.

Emphasis on economy in manpower, money and materials featured the three-day engineering conference on problems of utilities administration. From general meetings the opening day, the conference shifted to discussion groups which talked about fuel, electricity, refrigeration, water and sewage.

Analysis of water to determine the extent of corrosion and scale formation as indicated by the Langlier Index was advocated to conserve critical materials in hot and cold water systems and to gain economy in fuel for water heating. Many other problems of water treatment and sewage disposal were discussed with a view to conserving materials and manpower.

The refrigeration, ventilation and air-conditioning group heard stress placed on preventive maintenance. Periodic and thorough inspections were urged to eliminate breakdowns and emergency service work. The necessity of preventing Freon losses in Army camps, since the gas has become one of the most critical materials, was brought to the attention of the refrigeration group and a training program embracing a traveling school with equipment and instructors, is to be undertaken immediately to overcome the shortage of trained men.

Presiding at sessions, which included a dinner meeting at the Lakewood C Club, were Colonel R. R. Neyla Director of the Real Estate, Repai Utilities Division, Eighth Service mand, and Colonel H. W. Kelle Chief of the Repairs and Utilities of the command.

The conference was the seco series of three arranged by the and Utilities Branch of the C Engineers, Army Service Force first, in Chicago, was devoted cl maintenance and repairs.

U. S. Army Signal Co

Attending the Service Command Utilities Conference in Dallas, Nov. 19 to 2 to right: Colonel R. C. Kuldell, Chief of the Repairs and Utilities Branch, O the Chief of Engineers, and Colonel H. W. Keller, Chief of the Repairs and U Branch, Eighth Service Command.

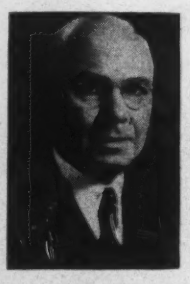
New engineer society proposed for Wisconsin

Formation of the Wisconsin Society of Professional Engineers has been proposed by the committee of registered engineers appointed last April (*ENR*, April 29, p. 654) to consider setting up an organization of professional engineers in that state. Under the proposed constitution and by-laws the new society would amalgamate with the thirty-five year old Engineering Society of Wisconsin, and would come into existence on Jan. 1, 1944. The proposed constitution has been distributed by the committee to 1,300 professional engineers registered in Wisconsin.

The executive board of the Engineering Society of Wisconsin has recommended that the constitution be adopted. Provision is made that members of the Engineering Society of Wisconsin become charter members without application. Members who are not registered under the state registration law must obtain their registration certificate by Jan. 1, 1945 to retain membership.

Savage, B. of R. designer, goes to India and China

John L. Savage, chief designing engineer of the U. S. Bureau of Reclamation, will leave soon on a special Far Eastern mission. Tentative plans involve a four months' stay in India where he will work on the final designs of a Punjab dam for a two million acre irrigation development, and a six months' stay in China where the designs of three projected dams will occupy his time. It is rumored that both the Indian dam and the largest of the Chinese dams will rival Grand Coulee in size.



Mr. Savage's last foreign assignment was during 1941 when he served as consultant to the city of Melbourne, Australia, in connection with the Upper Yarra Dam project.

New England flood da have proved their va

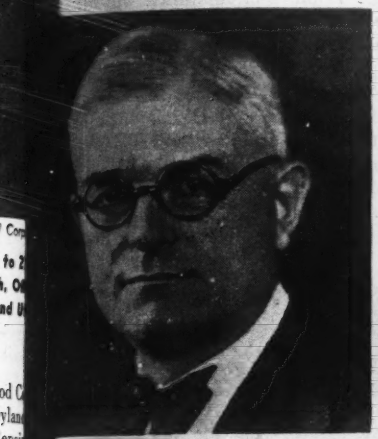
In November the Surry Mountain in New Hampshire and the Birch and Knightville Dams in Massach held back quick runoffs of wate might have caused industrial and cultural damage.

On account of heavy and conti rainfall, Lieut. Col. Edgar W. Gu army engineer from the Providence trict, ordered the gates at Surry tain closed. This resulted in a depth of water in the reservoir. this dam, completed only two years prevented damage to Keene, N. H.

All gates of the Knightville and Hill Dams were also closed. Res depths reached 72 ft. in a short Engineers report that although only of the proposed twenty Connecticut ley dams are completed, they have p their worth in impounding quick r holding water back for later releas removing the fear of floods and d to life and property.

Regional Directors of newly reorganized U. S. Bureau of Reclamation

Decentralization of the Bureau of Reclamation was ordered by Harold L. Ickes in September, (*ENR* Sept. 23, p. 445). Since then new offices have been set up by Commissioner Harry W. Bashore with regional headquarters as follows: (1) Boise, Idaho; (2) Sacramento, Calif.; (3) Boulder City, Nev.; (4) Salt Lake City, Utah; (5) Amarillo, Texas; (6) Billings, Mont.



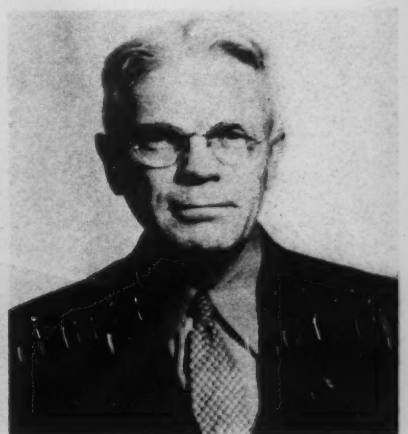
K A. BANKS, Region 1, has been em- continuously by the Bureau of Recla- since his graduation from the Uni- of Maine in 1906. After serving as ction engineer on various major projects, s given the job of directing construc- Grand Coulee Dam. He has held this ever since, with the exception of a service as acting administrator of the ille Power Administration.

CHARLES E. CAREY'S, Region 2, executive engineering experience dates back to 1918. He has been employed by the bureau, both in Washington, D. C., and as engineer in charge of negotiations for marketing power from the Central Valley project; by the Bureau of the Budget; and as a rate engineer, principal construction engineer, chief consulting engineer, and acting administrator of the Bonneville Power Administration.

ERNEST A. MORITZ, Region 3, joined the bureau in 1905. He served on the Garden City project in Kansas, on the Yakima job (Washington), in the Washington, D. C., and Denver offices, and on the Flathead project in Montana. After 13 years of private practice, he returned to the bureau in 1935. He served as construction engineer for Parker and Marshall Ford dams. In 1941 he was made director of power at Boulder Dam.

T O. LARSON, Region 4, joined the in 1923 as a junior engineer. Since has been in charge of investigations ganization of Utah projects. He super- construction of San Pete, the Midview nd Provo River projects. He has served Bonneville Lake Basin Committee, and tional Water Resources Committee.

WESLEY R. NELSON, Region 5, started with the bureau in 1923. He left the organization in 1926 for further education and rejoined the staff in 1931. He served as associate engineer on the Boulder Canyon project. In 1936 he was transferred to the Washington office as engineer, and the following year was promoted to chief, Engineering Division.

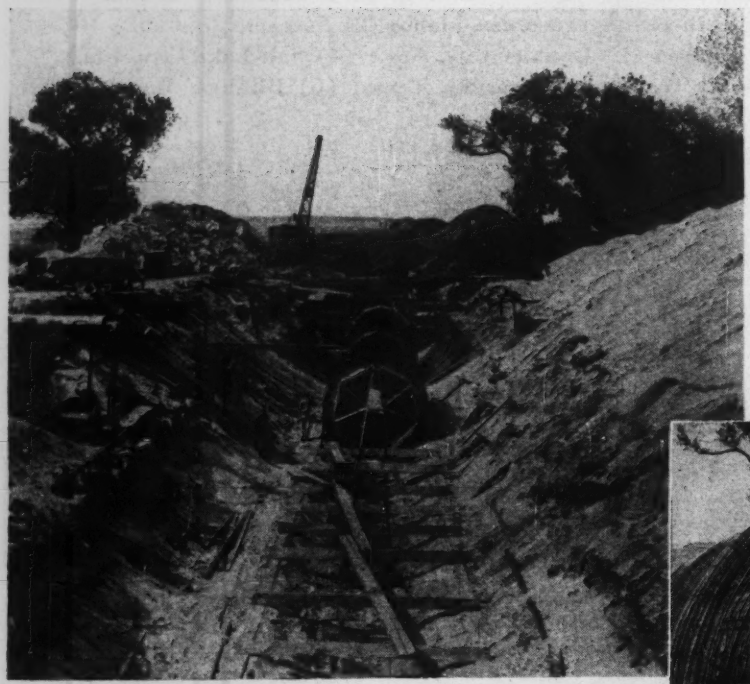


HAROLD D. COMSTOCK, Region 6, has been with the bureau since 1905, first as assistant engineer on the Belle Fourche project. He was resident engineer on the Pathfinder Dam of the North Platte project and from 1913 to 1918 served as drainage and office engineer. He has been superintendent of the Riverton (Wyo.) project since 1918.

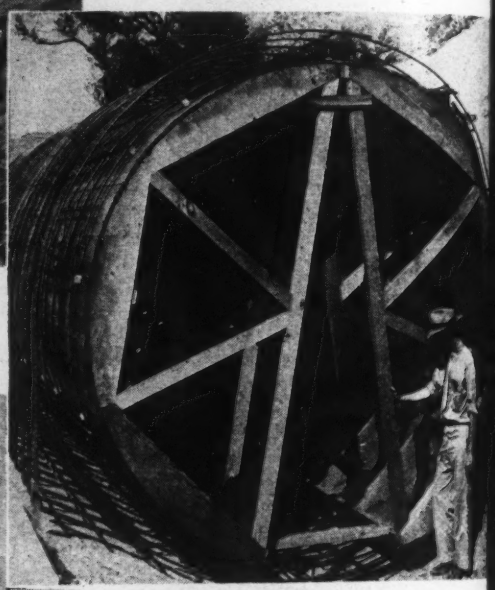
Work on Madera Canal being rushed as bids for last section are called

Driving forward in its program to com the Central Valley project, the Bureau of lamation is making good progress on Madera Canal. Eight miles of the canal ex ing from Friant Dam are complete, and on the 11-mi. section, which will extend canal to the north bank of the Fresno R is well underway. Bids for construction o last 16½-mi. section (*ENR*, Dec. 2, p. will be opened December 10.

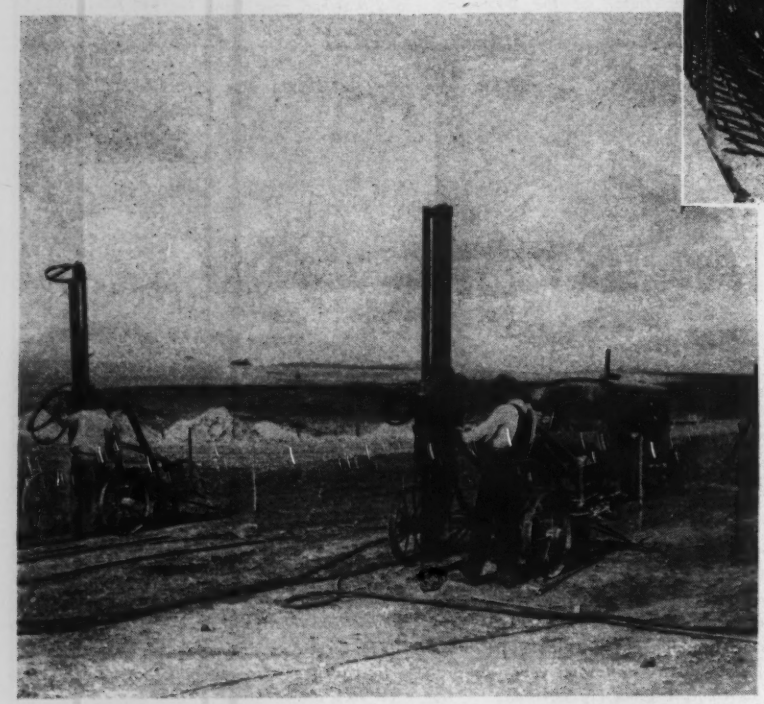
Larsen Bros., and Harms Bros. of S mento are constructing the 11-mi. section, Oberg Bros., of Inglewood are building Fresno River siphon illustrated, and the jacent structures. R. B. Williams is cons tion engineer for the Bureau of Reclama



Forms for the Fresno River siphon take shape as work is rushed to complete this project before the winter rainy season. Well-points on the left bank of the ditch enable contractor to form and pour the siphon barrel in the dry.



An internal form and reinforcing st place for a section of the monolithic si carrying the Madera Canal under the Fr River. The siphon is 10.5 ft. internal dia and its length, including transition sec is 1,025.5 ft.



After overburden is stripped from a roc tion of the Madera Canal right-of old iron-tired wagon drills move in to pare the way for dynamite.

OUR ENGINEER GENERALS

Commanding General, Persian Gulf Service Command

MAJ. GEN. DONALD H. CONNOLLY

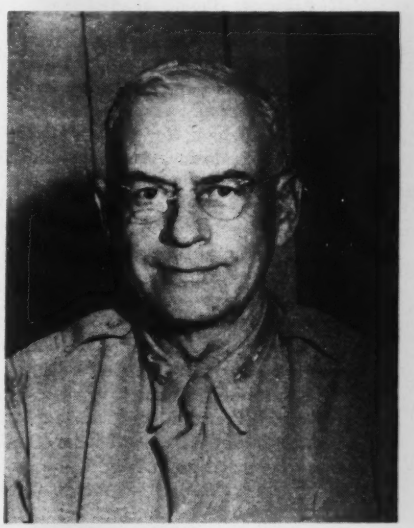
lin, Roosevelt and Churchill are the
that dominated the news from
this week, after these leaders of
nations met in its capital city
hran in an historic conference of
ration. Yet there is another name,
of Maj. Gen. Donald H. Connolly,
might well be included, for it is he,
mmanding General of our Persian
Service Command, who has made
ration real to the Russians.

en he met President Roosevelt at
ehran airport and later drove him
Camp Amirabad, American-built
uarters on the heights overlooking
y and snowcapped 18,000-ft. Dema-
beyond, General Connolly could
ave expected expressions of praise
his Commander-in-Chief. For over
now, and from this same city of
n, he has been directing an opera-
hat has pushed war supplies to
in ever-mounting volume. And,
just as important, his daily meet-
with Russian military and politi-
ders have developed a mutual feel-
trust and friendship that has per-
far and wide.

bassadors and ministers may have
the Tehran Conference, but an
can Army Engineer did much to
the atmosphere that assured its
s. We, who will benefit, should be
ar with the story of this man and
.

literally thousands of years Persia
een crisscrossed by busy trade
, and during the centuries a vast
e of products and supplies has
across its desert and mountain
Yet, even Aladdin, who quite pos-
was a Persian, could not have con-
such a transportation miracle as
has witnessed in 1943. Had he
his genie would have had to have
bled a caravan of eight million
s, each carrying 500 pounds, to
equalled what the American army
known as the Persian Gulf Service
and has moved to Russia during
st twelve months.

haps it is not too imaginative a
rison to say that it was a modern Alladin, in the person of Lt. Gen. Brehon B. Somervell, who summoned a genie in the person of Maj. Gen. Donald H. Connolly to effect this modern transportation miracle. At any rate, it was these two great Engineer officers who planned and organized the operation, and it has been the man known as Don Connolly to hundreds of American engineers and construction men who has directed it to a successful conclusion.



Maj. Gen. Donald H. Connolly

To anyone who knew General Connolly as district engineer at Memphis, later at Chicago and Los Angeles, and then as administrator of the Civil Aeronautics Authority, his successful handling of any assignment would not be surprising. Still, as you travel through the territory under his jurisdiction, which includes, besides Iran, the vast area of Saudi Arabia and Iraq, and sense the scope of the operations under his direction, as well as experience the forbidding climate and terrain that he has to contend with, you begin to wonder whether your recollection of him as soft-spoken, invariably pleasant and optimistic, even fatherly in his manner, may not be false. This seems to be a job for a man of exceptional physical and mental toughness —in a word, a hard-boiled driver. Connolly had never been that. Had he changed?

The time comes when you meet him at his headquarters in Tehran. Sitting in his Amirabad office, a pleasant room with map-and-chart-covered walls, you find your recollections of him were not mistaken. He *is* soft-spoken, pleasant and fatherly. His eyes twinkle, and his smile is captivating. Yet the thin, wide line that marks his lips has only to bend down slightly from the smile-position to bring a stern jaw into bold relief. Here perhaps is his secret, an engaging personality that invites cooperation and even devotion, but a reserve of firmness to handle the rough cases. Add to these qualities his ability to organize intricate operations, to pick men and delegate authority, and you have a combination that is made to order for the job of beating a path to Russia's back door and packing it with supplies that may well have tipped the Russian scales from defense to offense. (Premier Stalin said at Tehran, "Without American production the United Nations could never have won the war.")

These conclusions are pretty well substantiated by talks with members of his staff. "A man of great chivalry and tolerance, but with unbending firmness," says one. "He has done more to establish good relationships with Russia than any other man living," remarks another, who goes on to say, "The Russians like his direct dealing, and prefer his firm 'No' to a wishy-washy 'Yes' on requests that they make. I have seen the General sit in a conference for two hours without speaking, just listening to the discussion between his staff officers and the Russians. Then, having formed an opinion, he gives an answer, and the matter is settled. The Russians take it and like it. And they like the General, too."

The man to whom this praise applies

(*Continued on page* 10)

★ ★ ★

Bomb raid on German dams recited by squadron leader

Editor's Note—While Wing Commander Gibson, who led the raid on the Ruhr Valley dams, was in this country recently, an ENGINEERING NEWS-RECORD staff member had opportunity to discuss with him and ask questions about methods used in the raid, which was described, with details about the dams, in ENGINEERING NEWS-RECORD, June 17, 1943, p. 980. The following notes are based on that interview.

Wing Commander Guy P. Gibson, although only 25 years old, is a veteran of 175 sorties over enemy territory. He has been awarded the Victoria Cross, the D.S.O., the D.F.C. and, by President Roosevelt, the Legion of Merit. As the man who led the squadron that successfully bombed the Mohene and Eder dams in Germany last May, he has probably more information than any other man living as to just how such an operation can be carried out, what it requires and to what extent destructive damage can be done to a large concrete dam. Although many valuable points concerning methods and equipment must still be "off the record," censorship restrictions have permitted him to add some data to information heretofore available.

Intensive training required

Although several months of preliminary training of airplane crews were devoted to this project, it was only in the last 30 days before the raid that the exact procedure was decided upon, and into this short period was crowded the most intensive and continuous flight training. To keep the objective secret only seven men in all England (including Gibson) knew the true purpose of this training. To make their work seem logical men were told that the raid would have something to do with submarines. This explained the emphasis on dropping mines for explosion under water.

In selecting the pilots for this mission only men who were veterans of 60 or more raids on Germany were chosen. The average age of men in the squadron was only 21 or 22. The first work was on precision bombing; later they worked with models, flying at a height of 20 ft. Extreme accuracy was stressed. Finally, 30 days before the raid, all that had been learned in several months of training was concentrated in a test on an English dam where a full-scale bombing rehearsal was carried out. It was only after the results of this test, in which a dam in England was actually destroyed, that the exact methods to be used on the great Moehne Dam were finally settled.

It was then decided that the planes would have to fly in at exactly 50 ft. above the water surface. Thin-shell mines were to be used which would be detonated by "a combination of hydrostatic pressure and time mechanism." These mines would be undesirably exploded by surface impact if dropped from a height of more than 50 ft., nor could the mission be successful if the planes were at lower elevation. For similar reasons a speed of exactly 232 m.p.h. was decided upon. One more essential requirement was that the missile must strike the water surface within 5 yd. of the face of the dam to have the desired effect.

Accurate timing needed

For this elevation and speed, these requirements meant that delay of ☆ sec. in release of the missile would cause destruction of the plane and its crew. If the bomb struck the concrete the resultant instantaneous explosion at such close range would destroy the plane. (This did happen in the case of one of the bombers.)

It was decided that the raid could have maximum success during a period of only about one week because it was only during this time that reservoir water level would be just right. A practically full reservoir was desirable in order to use the continuing destructive rush of water to wreck the dam after the explosions had cracked it. However, some freeboard was required to mark the objective. The time chosen was when the water level was 4 ft. below the spill crest. The raid had to be made during the hours of darkness because lights were to be an essential part of fire control. Hence the timing of the raid to take place just before dawn.

The object was to place the mines in the water surface where they would sink to the desired depth close to the upstream face of the dam and there explode so that the non-compressive quality of the water (as distinct from an explosion on the surface or in air) would aid in developing seated damage to the concrete structure. By concentration of a series of such explosions at a critical point in the dam it was hoped to crack and rupture it to such an extent that the outrush of water would leave a breach deep enough to empty the reservoir completely.

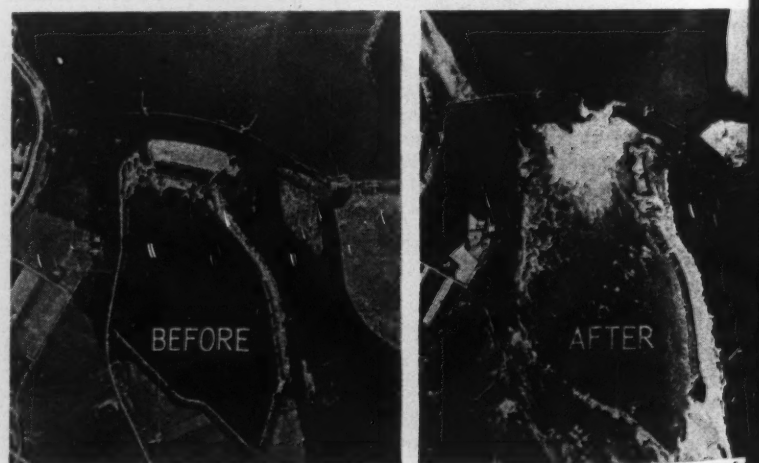
Nineteen bombers left an airbase in England about 3 a.m. on the morning of May 17. Flying inland over the Dutch coast at a height of about 20 ft., three were damaged by antiaircraft fire and had to turn back. "Slightly less than the remaining sixteen" arrived at the Moehne Dam.

The plan agreed upon was for the planes to go in one at a time, holding to each successive sortie for such coaching as the squadron leader would give over the radio. The first mine struck a spot a second too soon and merely raised a high column of water. This set up a terrific wave which so disturbed the reservoir surface that it was advisable to delay the next bombing run for about 15 minutes. Meanwhile, the planes circled.

Strong defense

Concentration of German gun emplacements near the dam made the bombing very perilous; the gunners in Gibson's plane fired 14,000 rounds during bombing runs at guns on and near the dam. The necessity for using lights on

(*Continued on page 14*)



British Information Ser

Aerial photographs show the Moehne Dam before and after the concentrated at by Royal Air Force bombers on May 17, 1943.

Postwar road problems discussed at Chicago

(*Continued from page 2*)

Thomas H. MacDonald, Commissioner Public Roads, centered his comments the critical situation with respect to truction equipment. Students of this he said, doubtless will question why meagre provision was made for re- and replacement of our transporta- system and its equipment. The next months will see an increase in the ation of equipment to highway work. period of accelerated maintenance faced by the state highway depart- ts will require by June 30, 1944, l trucks and 3,768 items of other pment, which will cost $13 million. this must be added $9 million for ir parts.

he procurement division of the Treas- is taking over the surplus equipment ll federal agencies and will give to tates the first choice of such equip- at agreed prices, Mr. MacDonald War Production Board activities those of the Army Service Commands respect to transportation matter are decentralized, he added, and recom- ded that the highway departments liarize themselves with the new setup. later session Louis Levenson, chief, tenance machinery section, govern- division of the War Production d, explained in detail how applica- for replacements and parts should andled under this new set-up. Mr. nson expects to see a decided im- ment in this situation within the three months.

Not an employment program

. MacDonald laid special stress on tatement that the postwar highway am now under consideration is not arily a job-making undertaking. Its purpose is to get our seriously ciated highway system back into perating condition and to take up g in development of the system d by current restrictions on new uction. A stand-by program is being ed to help take up any lag in em- ent that may occur.

e details of Mr. MacDonald's talk given in a subsequent issue.

es W. Mott, member of the House ittee on Post Roads, cautioned the y officials against opening the way other WPA by failure to formulate nite postwar road program in co- ion with Congress. Alphabetical es in Washington, he said, were making postwar plans without au- from Congress, which plans in- road work. Mr. Mott said that while not approve of all the details of ending postwar road bill (H.R. , he believed it to be sound in ple and recommended that it be put in final form for passage at an early date. As to financing the program, he does not think that the federal government's share will be an undue burden on the taxpayer as excise taxes should be adequate to carry it. He noted that in the past the government has only returned to the highways about half the money received from taxes on motor vehicle transportation.

Surplus road equipment

Recommendations concerning methods for the disposal of government-owned surplus maintenance and construction equipment after the war were presented by W. Vance Baise, state highway engineer, North Carolina. With a conservative estimate showing that there will be at least $50 billion worth of this equipment at the end of the war, intelligent management of the highest order must be used to effectively dispose of it without a wasteful dissipation of inventory or a serious disruption of our peacetime economy.

The real problem, said Mr. Baise, is not so much who shall control the disposal of these surpluses but what general policy should be followed in throwing excess goods on the market. To date most of the arguments regarding the policies to be pursued reflect chiefly the interest of those who advance them. For instance, the raw material group advocate scraping or dumping abroad; manufacturers would like everything shipped out of the country; and dealers will be content if the government moves its surpluses through regular distribution channels.

In view of the fact that much maintenance and construction equipment in civilian use throughout this country has depreciated beyond its economic life since the begining of the war, highway departments will desire to replace it as soon as possible. Surplus war equipment adaptable to these needs will no doubt be the only ready source of supply. Furthermore, the availability of this equipment to highway departments and contractors will expedite the prosecution of a vigorous postwar construction program.

Disposal of equipment

The highway engineers' viewpoint as to the proper procedure in disposing of this surplus government-owned construction equipment was reflected in answers to questionnaires sent to all of the 48 states. The general concensus was that equipment turned over to state highway departments should be distributed on a basis comparable with the present formula used for distributing federal aid funds. They did not believe it should be furnished gratis, but rather that it be sold to the state at a reasonable charge. Equipment in foreign countries at the end of the war, which is not required for use in this country or which is so far away that it would be uneconomical to return it home, should be distributed throughout those foreign countries on a lend-lease plan. In general, the highway departments were of the opinion that their equipment situation in the postwar era would be benefitted materially by the receipt of surplus equipment.

Although the government has recognized the enormity of this problem of equipment distribution and has initiated legislation looking toward its solution, Mr. Baise warned the members of the convention that only the most careful study and consideration of the problem would insure its not destroying this country's economic structure after the war.

The association's committee on maintenance and equipment was requested to study the question of the best manner in which to dispose of surplus construction equipment in the hands of the government after the war in order to give the government the maximum return without injury to private business. Included in the resolution of instructions to the committee was a recommendation that the members explore the proposals to distribute surplus equipment abroad on a lease-lend basis.

Overloads on highways

The association adopted a resolution urging all state highway departments to return to the enforcement of their regulations against overweight and oversized vehicles as modified to meet war conditions and requested the states that have not done so to adopt the A.A.S.H.O. uniform size and weight act. In discussion of damage being done by overloaded trucks, it was reported that some states had practically abandoned enforcement of any load and size regulations because of widespread abuse by truck operators claiming that the overloading is necessary to the war effort.

Another resolution instructed the executive committee to explore the possibility of the state highway departments maintaining civilian airports and flight strips after the war in cooperation with the federal government as part of the national highway system.

New officers

S. C. Hadden, chairman of the Indiana Highway Commission, was elected president to succeed Brady Gentry of Texas, and H. A. MacDonald, commissioner of public works for Massachusetts, was elected first vice president. Regional vice presidents elected were Ezra B. Whitman, Maryland; C. W. Phillips, Tennessee; H. G. Sours, Ohio; Burwell Bantz, Washington. New members of the executive committee are M. J. Hoffmann, Minnesota, and J. S. Williamson, South Carolina.

In accepting the presidency, Mr. Hadden impressed upon the state representatives the urgency of agreement on federal legislation to provide funds for postwar highway work and the need for develop-

ing support for the legislation when it comes before Congress for action.

Mr. Hadden also urged the states not to let their highways be destroyed by overloaded trucks on the specious argument that the overloading is in the interest of war. Selfish interest, he said, will be found behind most of such pleas rather than national interest.

Helen Whitaker, acting executive secretary of the A.A.S.H.O., reported that the association's compilation of needed construction on main highways now totals over eleven billion dollars.

Engineers consider highway research

Over 400 engineers and research specialists attended the four-day meeting of the Highway Research Board that immediately preceded the larger meeting of American Association of State Highway Officials. Details of the technical sessions will be given in a subsequent issue.

At the general meeting, Roy W. Crum, director of the Highway Research Board, reported that two new research operations were to be undertaken next year. The principle one is to be carried forward by the board and the Asphalt Institute with the cooperation of the Public Roads Administration. It is to be an investigation of the structural design of non-rigid pavements which will include laboratory studies on a large scale and construction of one-half mile test tracks. Reactions under loads up to 80,000 lb. are to be studied. The second research program relates to the permanency of freeze-proofing of subgrade soils with calcium chloride to prevent the detrimental effect of heaving. The Calcium Chloride Association will cooperate with the board in this study.

Importance of research

Mr. Crum stressed the importance of research in relation to the postwar highway construction program and urged more research, the training of more research technologists, and the conversion of research results into practical, usable form.

Similar views were expressed by Thomas H. MacDonald, commissioner, Public Roads Administration. The plan of research in the postwar period, he said, will be to raise the quality of the highways that are built and increase their durability.

Aerial highway mapping

Four papers related chiefly to the use of aerial mapping in highway work were presented at the general meeting. M. J. Harden, topographic engineer of the U. S. Geological Survey described modern stereoscopic methods for preparing such maps and Donald Belcher of Purdue and A. J. Eardley of Michigan University discussed the use of such maps for quick determination of soil characteristics. Robert Kingery, director, Chicago Regional Planning Assn., told how air views are being used in the location of Chicago's projected superhighways.

The Highway Research Board Award for 1943 was made to Ralph A. Moyer, research associate professor of highway engineering, Iowa State College, for his paper "Motor Vehicle Operating Costs, Road Roughness and Slipperiness of Various Bituminous and Portland-Cement Concrete Surfaces." This paper, presented at last year's meeting, summed up several years of road roughness research.

Postwar planning

A report of the Committee on Economic Problems of Postwar Highway Programs was submitted by Charles Upham, chairman of the committee at the meeting of the highway transportation economics division. The committee reviewed the relation of highway construction to national prosperity in substantially the form it is given in the recent report of the American Roadbuilders Association entitled "A Sound Plan for Postwar Roads and Jobs," which calls for an annual construction program of from $14 to $15 billion, of which $3 billion would be road construction. The committee, however, did not recommend a specific figure as a desirable objective. Detailed plans for a large volume of postwar highway work, it said, should be available to be drawn upon as called for by the overall needs of the national economy.

The committee noted that highway needs in the postwar period will probably exceed local resources available to meet these needs; also that in the demobilization period the available funds will bear no relation to the magnitude of the need in any particular region.

Highway system revisions

Revision of state, rural and urban road systems is recommended by the committee on the basis of traffic use and a subsequent revision of fund distribution according to the needs of the revised systems.

The existing divided administration often results in extravagant use of funds, the committee said. This condition will not be corrected by augmenting the funds, as is proposed by current legislation in Congress.

The committee endorses the principle of federal aid with respect to the federal-state relationship and recommends extension of the state-local relationship for equality of matching of the federal-state and state-local funds to preserve the mutuality of interest.

Maj. Gen. D. H. Connol

(*Continued from page 7*)

has had a long and eventful career in Corps of Engineers of the U. S. A Born in Fort Mojave, Ariz., Feb. 1886, the son of an Army captain, grew up in a military atmosphere, w led him to West Point, from which he graduated in 1910. His first year's ice was on the construction of the Pan Canal, and then after successive as ments at Fort Leavenworth, Fort Sill San Antonio, he was sent to the Ph pines in 1916. Returning after a year was, in turn, assistant chief of staff of 30th and 8th divisions, and in May, went to France. After serving with First Army, he came back to Washin where, from September, 1918, to J 1922, he was on the War Depart General Staff, leaving to attend the C mand School at Leavenworth, from w he emerged in June, 1923, as a tinguished graduate."

Five years as district engineer at M phis, 1923-28, and General Connolly, a major, took on some more schoo first as a student at the Army War lege and then as an instructor at Command School at Fort Leavenw Followed in 1934 his appointment as rector of the Civil Works Administra for Los Angeles, but after a few mo he was assigned as district enginee Chicago, where he served until Sep ber, 1935. A return engagement as C and WPA director in Los Angeles la until February, 1939, when he was signed to command the 2nd Engineer Fort Logan, Colo.

General Connolly's most important signment came in 1940 when the P dent appointed him administrator of Civil Aeronautics Authority, a pos which led naturally to his being tr ferred in January, 1942, to the Army Forces, to take charge of a new offic coordinate War Department and c federal department policies with re to civil aviation. Finally, in Septem 1942, he was transferred to Headquar Services of Supply, and the Persian Service Command was born.

Now it is ton-miles and not fig assignments that occupy Gen. Conno every waking moment. Justly prou the P.G.S.C. and its accomplishment thinks its record of building ports, ra railroads and assembly plants half around the world, and moving th times as much traffic as was ever m over the Burma Road, is one of our contributions toward winning the wa

His is an all-American show, in trast to the Allied Nations' fronts in other theatres. It has kept a lot of sian divisions in action, and has s thousands of Russian civilians from st ing. Don Connolly's career as an E neer officer could have no more ir climax.—*W. G. B.*

Recent engineering faculty changes

obert H. Nagel, formerly with the ineering department of the Tennes- Valley Authority, has been appointed istant professor of civil engineer- at the University of Tennessee, oxville. Mr. Nagel received his B. S. ree at Cornell University and his S. in civil engineering at the Uni- ity of Tennessee. He is also as- ant secretary-treasurer of the na- al society of Tau Beta Pi, and is or of *The Bent*, the official magazine he organization.

Hunter Jones, Durham, N. C., civil ineer, and George Hackney and ard Haynes, Durham architects, have n engaged to teach engineering draw- in the Duke University School of ineering to Navy V-12 men now sta- ed at Duke. Jones will also in- ct in a course in maps and map- ling for Marines now undergoing ning at the university.

ther additions to the teaching staff the Duke University Engineering ool include: R. Kenneth Jacobs, istant professor of civil engineering; ry Davidson Baker, Jr., instructor engineering drawing; and Roscoe h Oglesby, instructor in engineer- drawing.

indon J. Murphy, director of En- ering Extension Service, Iowa State ege, Ames, Ia., and recently on e to serve as an adviser to the Sev- Civilian Defense Regional Office, been commissioned in the U. S. lic Health Service Reserve and as- ed as regional sanitary engineer in Seventh Region, at Omaha, Neb. r. Murphy received the degree of engineer at Iowa State College. 926 and continued to take advanced ing in municipal engineering and ation, including a graduate course civil engineering teachers at Yale ersity. While taking graduate he served as instructor in civil neering at Iowa State from 1924 926 and had experience as a resi- engineer and field engineer asso- d with construction projects. Since he has been municipal engineer mes, director of the Engineering Ex- on Service at Iowa State, and con- nt to Iowa municipalities, schools, industries on engineering problems. 1942 Mr. Murphy became director tate civilian protection training ols under the auspices of the Iowa nse Commission, Iowa Department e American Legion, and Iowa State ge. In addition, he has been serv- s regional training adviser to the Defense Section of the Regional of the Seventh Region. For the latter assignment the college granted him a leave of absence.

Warren Raeder, professor of civil engineering at the University of Colorado, has been named head of the department. He succeeds Clarence L. Eckel, recently appointed dean of engineering.

The Daniel Boone Institute of Technology, organizing in Warrenton, Mo., has bought the Central Wesleyan College campus and buildings. James H. Russell, of St. Louis, is president and general manager.

Colonel Blake R. Van Leer, dean of the North Carolina State College School of Engineering, now on leave as chief of the facilities branch of the Army Specialized Training Division at Washington, D. C., was awarded the honorary degree of bachelor of science by Washington and Jefferson College November 20.

The citation accompanying the honorary degree praised Col. Van Leer "for his scholarship in the science of engineering, for his achievements in engineering education, and for his service in the war," and declared that "to the enormous task of establishing engineering and scientific training in colleges for war purposes, he has brought comprehensive knowledge of engineering education and high skill."

A graduate of Purdue University, Col. Van Leer obtained his master's degrees from the University of California and from Purdue, and has done additional graduate work at the University of Caen and the University of Munich. The citation declares that he is "an eminent engineer and international authority in the field of hydraulics." He served as a major with the 316th Engineers in World War I and won the Croix de Guerre.

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Peruvian educator visits U. S. engineering schools

Enrique Laroza, director of the National School of Engineers, Lima, Peru, after a three-months tour of 15 engineering colleges of the United States, and of the U. S. Bureau of Standards, has made recommendations for his school, based on observations in this country. The Peruvian government now has under construction for the school a new plant on an 82-acre plot of ground.

After his visit to Northwestern University's Institute of Technology, Evanston, Ill., the director said in a report:

"I recommend that the constructions of the new School of Engineers follow that of the Northwestern's Institute, on a much smaller scale and naturally according to our financial possibilities.

"The University of Maryland," he said, "can serve us as a model in various ways . . . on account of the extent of its laboratories which give us an idea of what we need and also on account of its close collaboration with certain federal departments and with the state of Maryland.

"The work of solving individual problems is very intensive in the North American universities," he observed. "We must follow them in that respect."

Concerning the U. S. Bureau of Standards, he said:

"In our country, we have no organization similar to the Bureau of Standards and consequently we are not certain that what we buy conforms to the specifications, if the meters of the private utility companies are exact, or if the construction materials will support what they should. It is necessary, therefore, that we should prepare the laboratories of the school so that they might make such tests and then later by law, such tests would be obligatory. . . . This same laboratory could adopt all that were possible from American standards."

In 1942, the National School of Engineers had 359 students. The 42 graduates included 14 in civil engineering, and three in architecture. The remainder were graduated in mining, mechanical and electrical engineering and in industrial chemistry.

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Plant reconstruction order anticipated by the F.P.C.

Contending that "the existing development does not make the best possible use of the water available at the site," the Federal Power Commission has authorized issuance of a 32-year license, retroactive to Jan. 1, 1938, to the Bellows Falls Hydro-Electric Corp., Bellows Falls, Vt., for its plant located on the Connecticut River near the towns of Wilder, Vt.; and Lebanon, N. H., on condition that the corporation be subject to further orders to reconstruct the plant after the war. The development consists of a concrete buttress-type dam, 635 ft. long and 30 ft. high, a small pond, canal, and two power houses of which one contains two 100-hp. turbines, and the other contains three 1750-hp. turbines. The present dam was constructed in 1926. The original timber timber-crib dam was built about 1882.

Present hydraulic capacity of the plant is about 2,400 cfs. The commission's opinion said that for the 90 percent of the time the flow could be increased to about 2,800 cfs. by the construction of proposed reservoirs. It said further that the present 5,000-kw. capacity could be increased to a probable 35,000-kw. if necessary.

War prisoner work camp proposal is opposed by California contractors

Southern California chapter of the Associated General Contractors of America thinks it would disrupt the facilities of the local construction industry.

A strong protest against the proposed establishment of a German war prisoner construction camp near Los Angeles, Calif., was voiced by F. J. Connolly, manager of the Southern California chapter of the Associated General Contractors of America.

In a letter to Lloyd Aldrich, city engineer, who said he had been informed by an unidentified federal agency of the plan for the erection of such a Nazi prison camp for 40,000 to 60,000 prisoners, Connolly wrote:

"The importation of such war prisoners would disorganize the facilities of the construction industry by diverting construction machinery, materials, engineers and supervisors from our vital war construction work. It would destroy the balance which has made it possible for the industry to perform in record time $1,500,000,000 in construction in this area since the war began.

"An invasion of 40,000 to 60,000 Nazi prisoners into the field of the local construction industry probably would destroy the livelihood of 20,000 to 30,000 American workmen and their families. It would undermine the wage structure of the industry and change the entire complexion of postwar plans."

Connolly urged that a conference be arranged immediately between city and federal officials and representatives of the construction industry, labor and taxpayers, to discuss the project.

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Senate committee opposes second road to Alaska

A subcommittee of the Senate Committee on Post Offices and Post Roads, after making a first-hand study in Alaska, has reported to Congress that the construction of a military supply highway to Alaska by way of Prince George, British Columbia, and Whitehorse, Yukon Territory, is not warranted at this time for military purposes. Such construction was provided in Senate Bill 297, which is before the committee.

Members making the trip through Alaska for purposes of making a study of the possible needs of the proposed military road, and also to report on the Alaska highway, included Senators Scrugham, Buck, and Langer. The subcommittee was also accompanied and assisted by Maj. Gen. Philip B. Fleming, Administrator of the Federal Works Agency; Brig. Gens. J. A. O'Connor and L. D. Worsham; Thomas H. MacDonald, Commissioner of Public Roads; J. S. Bright, district engineer of the Public Roads Administration, Col. K. G. Bush; Col. Paul Betters, Col. L. Friedlich, and Maj. Bryce Harlow, of the United States Army.

The report said in part, "The highway, proposed by S. 579 is not warranted at this time, for military purposes. The use of the necessary manpower, materials, and equipment cannot be justified during the war. The Alaska Highway, as now constructed, fills all military highway needs in connection with the defense of Alaska and offensives based on Alaska. If large numbers of troops are to be stationed in Alaska, then neither the Alaska Highway nor the highway provided for in S. 579 would be economical for supply purposes. The Alaska Highway is, however, sufficient as an emergency supply route to supplement th water route.

"The gravel surface on the hig will require continuous maintenance. perience during the coming winter indicate the need for additional meas to prevent icing on the road, and so the timber bridges that have been tinued in use may require replacem Provision should be made for me these needs promptly as they arise."

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WPB gives approval to big railroad tunnel

The War Production Board has proved the driving of a new million-d tunnel through Bozeman Pass, 12 north of Livingston, Mont., by the N ern Pacific R. R., as soon as a con can be awarded after the taking of

WPB found the new tunnel to be n sary because repairs to the old one, n sitated by caving in of the roof, c not be made while it is in use, du heavy traffic and the fact of space f detour. Trouble started ten years ag the old structure, which was built ing 1882–84. The projected tu about 100 ft. north of the present will be about 2,850 ft. long, app mately 800 ft. shorter than the one no use; it will be 18 ft. wide and 2 high, as compared to present dimens of 16 and 19¾ ft.

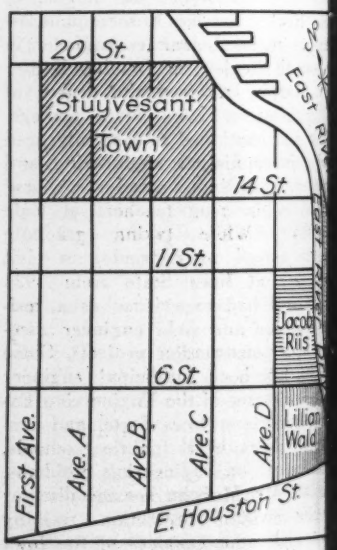
Stuyvesant Town housing project is legal, says Court of Appeals

Postwar construction of Stuyvesant Town in the Borough of Manhattan, New York City, a $40,000,000 project of the Metropolitan Life Insurance Company (*ENR*, Apr. 29, p. 649), was upheld in effect on Dec. 2 by the New York Court of Appeals, which, by a 4 to 2 vote, sustained the constitutionality of the amended urban development act under which the housing development was authorized.

The decision of the highest court of the state also affirmed lower court decisions in a suit instituted by property owners in the area bounded by Fourteenth and Twentieth Streets and Avenues A and C to restrain New York City and the insurance company from proceeding with plans for the project.

According to present plans, Stuyvesant Town will be built on eighteen square city blocks. The area was formerly known as the old gas-house district.

When the project is completed, it will be the largest low-cost housing development ever undertaken in Manhattan. It is expected that 30,000 persons will occupy the modern apartment houses to be built where 11,000 persons now live.



The above map shows the location Stuyvesant Town and the pro federally-financed Jacob Riis Ho and the state-financed Lillian Houses.

onstruction Communiques

Engineering news from the battlefronts

nited States—Among the war's un- heroes are the tractor drivers who equipment ashore on a beach under ny fire or build and repair advance elds subject to bombing and strafing. therefore good news that armored for crawler tractors are in the offing se by Army Engineers, and probably by the Seabees.

ngland—Just over $550,000,000 will pent on airfields and depots in Eng- for the U. S. 8th Air Force, accord- to the British Ministry of Information. greater part of the material is being vided by the British government. Be- e of the British manpower shortage, erican construction units are assist- supplying the bulk of constructional r for one airfield or depot of every n being built.

ew Guinea—"If you had asked an en- er before the war to build a 5,000-ft. strip in two days he would have hed in your face," said an A. P. cor- ondent in the New York *Herald- une* on Nov. 13. and he continued: t air-borne American engineers un- ed 5,000 lb. from each of their C-47 p carrier planes in seven minutes at , built a mile-long air strip in forty- hours and took pot shots at Japanese bers on the side.

They followed the paratroopers into zab one day and, before the sun set, mowed the kunai grass, smoothed the runways and began building revetments, all with their specially made machinery.

"One observer watching them at work at Nadzab commented, "The C-47, the jeep and the bulldozer—three things the Japs don't have—are winning the war in the Pacific."

Great Britain—In a cable from London on Nov. 10, a correspondent of the New York *Times* said: "Engineers of the Eighth United States Army Air Force recently completed a record job of resurfacing 100,000 sq.yd. of perimeter track in ten days while the airfield on which they were working was being used for operations.

"The engineers labored in two shifts of ten hours each, using the extra four hours in each twenty-four for service maintenance. Much of the work was done at night with unshaded lights, which fortunately did not attract any German bombers.

"The engineers' only operational problem was keeping out of the way of bombers making regular trips between Britain and the continent."

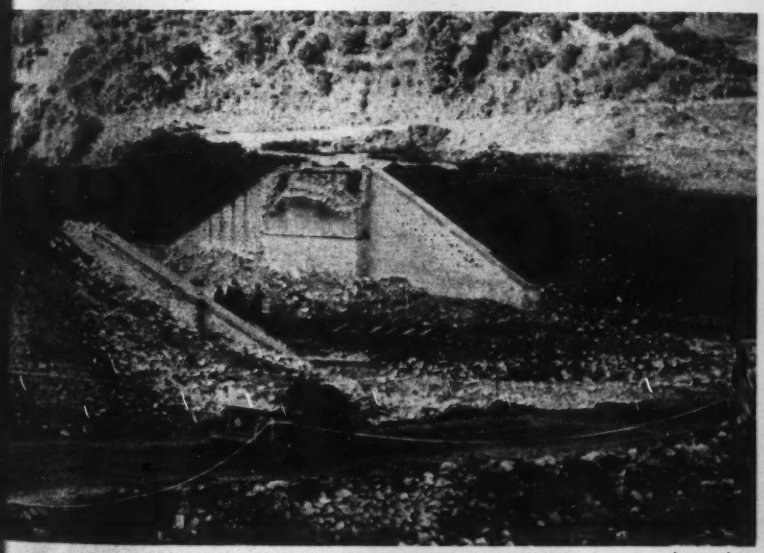
The Seabees—Seabees have conducted themselves with gallantry under fire, giving a good account of themselves under the most difficult conditions, Capt. John R. Perry (CEC) USN, told the Washington Building Congress recently.

Capt. Perry, one of the organizers of the Seabees, said that the first three groups ashore at Salerno were the Commandos, Rangers and Seabees.

"Sixty percent of one company's men," he continued, "qualified for the Order of the Purple Heart (wounded in action) and many of them will not be coming back.

"It was the same at Rendova in the campaign on Munda. It was a Seabee who shot down the first Zero there. When an LST was bombed so heavily that its entire crew was *hors de combat*, the Seabees on the beach waded out, boarded it, manned the guns, fought the Japs off and brought her in."

Early in 1942, he pointed out, it was thought that five battalions of some 1,000 men each would be sufficient, but the present goal calls for more than 200,000 fighting builders.



Acme photo

The Fifth Army builds and uses a detour in Italy

dynamiting this bridge between Naples build a detour down from the embankment d Rome, the retreating Nazis only delayed to the valley floor and across the stream on e advance of the American army during the a temporary bridge to a steep incline to the riod required by the engineer troops to road on the far side.

• • •

Illinois highways damaged by war traffic

Unless an adequate program of highway maintenance and reconstruction is closely followed, some of the main roads in the Illinois highway system may become impassable to traffic by the end of next year. This was the opinion expressed by C. M. Hathaway, construction engineer, Illinois Highway Department, in an address before the recent fall meeting of the Illinois Road Builders Association, in Chicago.

Wartime traffic, he said, has included transport units carrying loads in excess of legal limitations to such an extent that many sections of highways are being broken down at an alarming rate. Only quick action on the part of highway builders in repairing these damages will save the roads from complete failure. It is hoped that the WPB will issue the necessary approval for more reconstruction work to be done next year, he added.

Nearly 700 members of the association and their guests, heard Senator A. B. Chandler, of Kentucky, discuss postwar planning at the sixth annual dinner following the one-day session. One of our most important postwar jobs, said Sen. Chandler, will be the immediate repair and reconstruction of as much of our war worn highways as possible. Many existing highways will need modernizing to safely carry high speed traffic, he continued, and much improvement will be necessary in the methods used for routing traffic into and out of large cities.

Henry Fowler, of Chicago, was reelected president of the association for the coming year; A. B. McDonald is the new vice president and Donald O. White was reelected treasurer. Taylor G. Soper, Chicago, is the association's secretary-manager.

JOBS OF THE WEEK

DWELLINGS, Los Angeles, Calif.

Allied Constructors, Inc., Los Angeles, Calif., will construct by its own forces 250 frame and stucco dwellings, to cost $1,500,000. George Adams, Glendale, is the architect. Seaboard Engineering Co., Beverly Hills, is the engineer.

POWER PLANT, Ohio

Ohio Power Co., Canton, O., will construct a power plant, to cost $2,000,000 or more. Sollitt Construction Co., South Bend, Ind., is the contractor.

BARRACKS, Patuxent River, Md.

Bureau of Yards & Docks, Navy Department, Washington, D. C., received the low bid on barracks, at Naval Air Station, from Irons & Reynolds, Washington, D. C. Item 1, $530,062; item 2, $661,564; item 3, $618,692.

BARRACKS, Washington, D. C.

Bureau of Yards & Docks, Navy Department, Washington, D. C., received the lowest bid from Ross Engineering Co., Washington, D. C., for Waves barracks at West Potomac Park, at $848,125.

HOUSING, Galveston, Tex.

Robert E. McKee, El Paso, Tex., has been awarded contract by Public Housing Authority, Ft. Worth, for housing at $1,225,000. R. R. Rapp and Fred Stafford, Galveston, and Donald Barthelme and Associates, Houston, Tex., and Ristay, Stone & Finger, Houston, are the architects.

HOUSING, Williamsburg, Va.

Public Housing Administration, Washington, D. C., received the lowest bid for housing group from Anthony P. Miller, Inc., Atlantic City, N. J., at $1,449,000. Wiley & Wilson, Lynchburg, Va., are the architects.

CHEMICAL MANUFACTURING PLANT, Texas

Celanese Plant Corp. of America, New York, N. Y., awarded a contract for the construction of a chemical plant for manufacturing acetic acid, acetone, methanol and formaldehyde to Gasoline Plant Corp., Houston, Tex. The estimated cost is $5,000,000.

HOSPITAL, Portsmouth, Va.

J. O. Burgwin & Co., Pittsburgh, Pa., has been awarded a contract for hospital and nurses home, for Federal Works Agency, Washington, D. C., at $846,900. J. E. Edmunds, Baltimore, Md., and Rudolph Cooke & Van Leeuwen, Norfolk, Va., are the associated architects.

QUARTERS, Patuxent River, Md.

Bureau of Yards & Docks, Navy Department, Washington, D. C., received the lowest bid for constructing married enlisted men's quarters at Naval Air Station, from Harwood-Nebel Construction Co., Inc., Washington, D. C., at $1,836,000.

CAFETERIA AND FOOD SERVICE BUILDING, Seattle, Wash.

Boeing Aircraft Co., Seattle, Wash., will construct a cafeteria and food service building to cost $750,000. The construction contract goes to Western Construction Co., Seattle, Wash. The Austin Co., Cleveland, O., is engineer and architect.

OIL REFINERY, Bayonne, N. J.

Tidewater Oil Co., New York, N. Y., awarded a contract for the construction of an oil refinery, including thermofor catalytic cracking unit to The Lummus Co., New York, N. Y. The estimated cost is $2,000,000.

HOUSING, Middletown, Pa.

Haris Construction Co., Brooklyn, N. Y., was the lowest bidder on 420 dwelling units, when Public Housing Authority, New York, N. Y., took bids at $1,154,580. W. L. Murray, Harrisburg, Pa., is the architect.

APARTMENT BUILDINGS, Middle River, Md.

Oak Grove Apartment Co., Baltimore, Md., awarded a contract for construction of 20 apartment houses to Thomas Mullan & Sons, Baltimore, Md. The estimated cost is $1,547,000. Alan B. Mills is the architect.

ROAD, Mexico

Department Public Works, State of Jalisco, Guadalajara, awarded a contract for constructing road between Guadalajara and Barra De Navidad, to Miguel Ochoa, Guadalajara. The estimated cost is $700,000

Note—Additional bidding and contract news on many projects large and small appear in the Construction News section beginning on page 16.

German dams bombed

(Continued from page 8)

planes in the bombing runs made particularly vulnerable to gunfire. losses were heavy.

However, after several missiles been placed, a crack was visible on top of the dam. Subsequent mines ened this crack. The breach at the as shown by pictures made later, found to be 270 ft. The squadron st nearby making the successive at over a period of 2½ hours. By this the breach had so widened that it apparent the usefulness of the dam storage unit had been destroyed. (It later learned that it took 18 hours the reservoir to empty through breach.)

During this slow job of destruc the wing commander's radio was in stant communication with the bo chief at the English base and from base there was telephonic connec with Washington D. C.—an internati hookup reporting play-by-play pro of the raid. At the end of 2½ h some of the bombers, their mines gone, returned to base. Four bom then went over to the nearby Dam which they seriously dama ("pranged"), although one of the was destroyed in a blinding yellow when the bombardier overshot and mine struck the concrete. Of the si planes that got into Germany on mission, eight eventually returned to base in England.

• • •

Norfolk gets federal aid for garbage incinerator

Allocation of $186,100 in Federal f to aid the city of Norfolk, Va., in fi cing the construction of a garbage cinerator has been approved by President, Kenneth Markwell, FWA gional director, has been informed Major General Philip B. Fleming, F eral Works administrator.

Preliminary plans prepared by dolph, Cooke & Van Leeuwen, Inc., ar tects, of Norfolk, call for a 3-story and reinforced concrete structure to h four incinerator units having a t capacity of 400 tons in 24 hours. incinerator will be completed at an e mated cost of $266,100. The city contribute $80,000.

Additional garbage disposal facil are urgently needed, according to ports received by the FWA regional o from city officials. As a result of activities in the Norfolk area, the vol of refuse collected increased from 253 cubic yards in 1940 to 375,365 c yards in 1942, and the three incinera which the city is operating at pres cannot handle the increased volume refuse.

OBITUARY

...arry Morrow Pierce, 70, a director ...I. du Pont de Nemours & Co. and ...ed president of the du Pont Engi...ing Company, died Nov. 23. During ... first World War he designed and ...rvised the construction of smokeless ...der and high explosive plants valued ...225,000,000.

...illiam Horstmeyer, 71, San Fran... building contractor for more than ...ears, died Nov. 25.

...homas A. Rice, 54, former Oregon ... highway resident engineer at New..., Ore., died Nov. 16. He was ad...istrative assistant in the Siuslaw na...al forest headquarters at Corvallis,

...ieut. Harry Myers, Jr., associated ... the Texas State Highway Depart... at Tyler when he joined the Navy ...941, died Nov. 1, in the Southwest ...ific area, of battle injuries. He was ...ing with a naval construction bat...on.

...red E. Botts, 62, contracting engi..., died Nov. 24 in Kansas City, Mo. ...was the builder of the dams forming ...ira Lake in Kansas and Drennon, ...rir and Weatherby Lakes in Missouri.

...ruman F. Partridge, 82, former engi... in the Warren, Ohio, city water...ks, died Nov. 27.

...dson P. Canfield, 73, civil engineer, ... Nov. 22 in Salem, Ohio. He was ...neer for Mahoning and Trumbull ...nties many years.

...eville B. Graham, 37, civil engineer ... Brown & Root Co., contractors, at ...ston, Tex., died Nov. 18.

...unter Brickham, 35, who headed a ...ey crew for the Fairchild Aerial Sur... Corporation in New Guinea four years ... died at Denton, Tex., Nov. 10.

...ol. William W. Hendricks, 50, who ...sted in the fortification of American ...essions in the South Pacific and at ...rl Harbor, died Nov. 28. He was ...neer and supervisor of construction ...hasta Dam and assistant to the chief ...neer in the construction of Grand ...lee Dam. With the Army engineers ...irected construction at Honolulu. He ...ntly returned from Canada where he ...ed with the engineers on the Alcan ...hway.

...ouis Hurtubise, 63, consulting engineer and formerly town engineer of Montreal East for 10 years, died Nov. 18.

David White McNaugher, 84, consulting engineer, vice president and treasurer of the Robert W. Hunt Company of Chicago, died at Pittsburgh, Pa., Nov. 24.

Col. Henry C. Hengels, 67, military architect and engineer of Wisconsin for the past 25 years, died Nov. 24. He supervised construction of state armories and other military buildings, lately at Oshkosh and Fond du Lac.

Hubert Miller Walker, 56, vice president and general manager of the P. J. Walker Co., Los Angeles and San Francisco, Calif., builders, died Nov. 30. He was a former president of the Associated General Contractors of Southern California. His company built many prominent structures, including the Federal Reserve Bank in San Francisco and the Times building in Los Angeles.

Edward M. Smith, 77, civil engineer for 40 years with the Boston & Maine R. R., died Nov. 29.

H. P. Hayes, 73, civil engineer with the Texas State Highway Department for twenty years, died Nov. 14.

Charles Evan Fowler, 76, retired civil engineer, died Nov. 18 at Seattle, Wash. For several years he was president of the Puget Sound Bridge & Dredging Co. Mr. Fowler was chief engineer for the $30,000,000 suspension bridge between Detroit and Windsor, Ont.

CONTRACTS AND CAPITAL

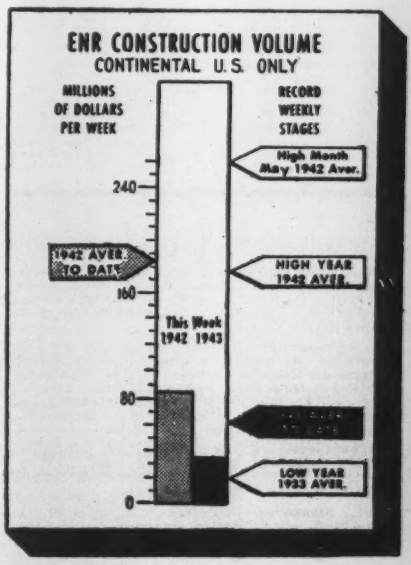
CIVIL ENGINEERING construction volume in continental U. S. totals $34,652,000 for the week. This volume, not including the construction by military engineers abroad, American contracts outside the country, and shipbuilding, is 34 percent below last week, and 59 percent lower than in the corresponding 1942 week.

Private construction tops the preceding week by 108 percent, and is 430 percent above the 1942 week. Public construction, however, is 58 percent under a week ago, and down 77 percent compared with a year ago.

The current week's construction brings 1943 volume to $2,972,217,000, an average of $60,657,000 for each of the 49 weeks of the period. On the weekly average basis, 1943 construction is 67 percent below the $9,120,618,000 for the 50-week 1942 period. Private construction, $474,066,000, is 12 percent lower than last year, and public construction, $2,498,151,000, is down 70 percent when adjusted for the difference in the number of weeks.

In the classified construction groups, gains over last week are in industrial and commercial buildings. Increases over the 1942 week are in bridges, and industrial and commercial buildings.

New capital for construction purposes for the week totals $931,000, and is made up entirely of state and municipal bond sales. New construction financing for the 49 weeks of 1943, $3,067,283,000, is 69 percent below the $10,211,597,000 reported for the 50-week 1942 period.



CONTRACTS

Continental U. S. Only (Thousands of dollars)

	Week Ending Dec. 10 1942	Dec. 2 1943	Dec. 9 1943
Federal	$79,823	$40,580	$17,263
State & Municipal	2,387	3,814	1,209
Total public	$82,210	$44,394	$18,472
Total private	3,058	7,787	16,180
TOTAL	$85,268	$52,181	$34,652
Cumulative 1943 (49 weeks)			$2,972,217
1942 (50 weeks)			$9,120,618

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1942 50 weeks	1943 49 weeks
NON-FEDERAL	$632,411	$313,445
Corp. Securities	181,229	22,228
State & Mun.	211,027	125,539
R.F.C. loans	157,455	14,545
FPHA loans	.....	3,133
R.E.A. loans	.....	20,000
Fed.-Aid Hwy.	82,700	128,000
FEDERAL	$9,579,186	$2,753,838
TOTAL CAPITAL	$10,211,597	$3,067,283

ENR INDEX NUMBERS

Index Base=100		1913	1926
Construction Cost	Dec. '43	294.51	141.57
Building Cost	Dec. '43	231.49	125.14
Volume	Nov. '43	149	65

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*
(Daily service also available—Write for details)

WATER SUPPLY

PROPOSED WORK

Mo., Jefferson City—Arkansas Municipal Water Co., Pine Bluff, imprv. recently purchased plant for former Capitol City Water Co. $100,000.

N. D., Minot—L. G. Wilhelm, city engr., water and sewer lines. $15,000.

O., Canton—Comrs. Stark Co., Canton, making plans, specifications and estimates laying watermains in Reedurban-Genoa Area Sanitary Sewer Dist., 5 mi. west of Canton Corporate limits. $50,000 or more. L. K. Zerbe, Canton, co. engr.

Pa., McKees Rocks—Bd. Comrs. Alleghany Co., County Office Bldg., Pittsburgh, bids soon pump. station completion, $112,000. Levi, Bird Duff Co., County Office Bldg., Pittsburgh, engrs.

Tenn., Carthage—River intake filtration plant, $40,000. J. H. Boatman, 1219 Greenfield Ave., Nashville, engrs.

Tenn., Knoxville—State, Dpt. Institutions, A. G. Jean, purch. agt., Nashville, water treatment plant, at Eastern State Hospital. Over $15,000.

Tex., Abilene—W. W. Hair, mayor, City Hall, water imprvs., $222,000. Applied for FWA funds. Freese & Nichols, Capps Bldg., Fort Worth, engrs.

Tex., Spofford—State Dpt. Health, Land Office Bldg., Austin, WW imprvs. Applied for FWA funds. J. C. Calhoun, Jr., Houston Merc. Exchange Bldg., Houston, engr.

Wis., Goodman — Goodman Lumber Co., Goodman, sewerage sys. imprvs., $60,000-$70,000. Foth, Boyd & Porath, Columbus Bldg., Green Bay, engrs.

Ont., Caledonia—Municipality, c/o A. G. Emerson, clk., WW sys. $35,000.

Ont., Forest Hill (Toronto)—Village, F. G. Gardiner, reeve, 6 in. c.i. mains, Old Park Rd., Reidelle Ave., Ridge Hill Dr., 12 in. c.i. mains, Elm Ridge Dr., $16,100. N. MacNicol, 333 Lonsdale Rd., engr.

BIDS ASKED

Bids Asked December 16

N. Y., Brooklyn—Comr. Water Supply, Gas & Electricity, Municipal Bldg., New York, 7, hauling, laying watermains, appurtenances, Farragut Rd., Carlton Ave., E. 83, E. 87 and Jerome Sts. Plans deposit $1.

Bids Asked December 27

S. D., Sioux Falls—J. E. Nelson, city comr., addnl. gravel screen type well, 40 ft. diam., producing 2 m.g. daily. CD 8/19—ENR 8/26.

LOW BIDDERS

D. C., Wash.—District Comrs., District Bldg., Dec. 1, cleaning 20 and 24 in. and cleaning, lining 36 in. watermains, from Centraline Corp., 104 Cedar St., New York, N. Y.. **$16,518.** CD 11/23.

†Maryland—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., Dec. 2, filter plant, NOY 6738, at Carderock, from F. H. Martell Co., Inc., 314 Insurance Bldg., Wash., D. C., **$87,360.** CD 11/24.

†Mass., Hudson—Town, Comr. P. Wks., Town Hall, Dec. 3, 4 wells, pump. house for expansion municipal WW sys., Mass. 19-181, from E. F. Hughes, 53 State St., Boston, **$19,195. FWA.** CD 11/23.

†N. Y., Niagara Falls—Federal Works Agency, 101 Park Ave., New York, Zone 7, Nov. 29, filtration reservoir, Contr. 2, water supply sys. expansion, NY 30-49, from McLain Constr. Co., 1209 Hertel Ave., Buffalo, pile construction. **$265,500.**

CONTRACTS AWARDED

†Ark., Pine Bluff—U. S. Eng., 300 Bway., Little Rock, drinking water pipeline in chemical area, Pine Bluff Arsenal, to Gillioz Constr. Co., Monett, Mo., **$29,679.** Awarded 11/29.

†Calif., Camp Elliott (br. San Diego)—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., water supply line, Jacques Farm, NOY 7480, to Macco Robertson Co., Clearwater, **$15,750.**

†La., Camp Polk—U. S. Eng., 25 St. and Avenue F, Galveston, Tex., 4 water wells, pump. equip., etc, Sol 41-243-44 C87, to Coastal Water Wells Co., Welsh, **$18,000.**

†Massachusetts—U. S. Eng., 819 Industrial Trust Bldg., Providence, R. I., watermains, No. 44/66, Dukes Co., to Frankini Constr. Co., 20 Mystic Ave., Medford. Est. **$15,000.** CD 11/30—ENR 12/2.

Pa., Greenville—Municipal Auth. of Boro of Greenville, W. Insull, in charge, Northeastern Water & Electric Service Corp., Latrobe, 30x120 ft., rein.-con. sedimentation basin, 1 story, 30x30 ft., brick mixing chamber, to Eastern Engineers Constructors, Main St., Poland, O. CD 10/22—ENR 10/28.

†Washington—U. S. Eng., 800 3 Ave., Seattle, Zone 4, water supply sys., Contr. 45-108-Eng-384, Quillayute, to Gaasland Constr. Co., Bellingham, approx. **$27,964.**

Ont., Strathroy—Middlesex Co., c/o W. A. Sutherland, clk., London, concrete dam, digging wells, day labor. W. R. Smith, County Bldg., London, engr.

Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily
A-E-M Architect-Engineer-Management type of contract

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Named in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Unclassified
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads):

BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Note: To comply with censorship requirements, addresses on some reports are being generalized. Data which would reveal the purpose of the improvements and the size are withheld. The name of contractor and general area are reported.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Calif., Richmond—City, outfall sewer sys. on south side, $372,000. Thomas, Albee & Whipple Co., 156 University Ave., Palo Alto, engrs. CD 4/26—ENR 4/29.

†Conn., Bridgeport—City Dpt. P. Wks., Hall, bids soon Contr. 8, sipiron under Yellow Mill Pond, Conn. 6-107. **FWA.** H. L. Rowe, city engr.

Ia., Adel—R. E. McNichols, city clk., preliminary surveys sewage plant. $20,000. Stanley Eng. Co., Muscatine, engrs.

Ia., Ottumwa—D. A. Nevin, mayor, City Hall, sanitary and storm sewer in Mary ... incl. 10,183 ft. trunk sewer and 51,000 ft. laterals, $285,449.

★**O., Springfield**—City, defeated bonds, ... erage sys. and treatment plant, ... $1,500,000. W. E. Lucas, city engr. CD ... ENR 9/16.

Wis., Green Bay—C. Centen, city clk., City Hall, garbage incinerator. F. J. Steena, ... engr.

Wis., Sparta—H. L. Beckman, city clk., sewage treatment plant, incl. addnl. sludge beds.

N. B., Moncton—Municipality, incinerator plant. $60,000. E. B. Martin, City Hall, engr.

Ont., Caledonia—Municipality, c/o A. G. Emerson, clk., sewerage sys.

Ont., St. Catherines—City Clerk, civic incinerator. $65,000. B. F. Lamson, City Hall, engr. CD 7/22—ENR 8/5.

BIDS ASKED

Bids Asked December 14

†Ill., Carterville—City, c/o City Clerk, City Hall, sewerage sys., completion treatment plant, Ill. 11-256. $72,618. **FWA.** E. A. Fenton, 3 S. Meramec St., St. Louis, Mo., engr. CD 9/14—ENR 9/16.

†Va., Cradock—At office Purchasing Agent, Norfolk Co., County Bldg., Portsmouth, ... ing 2,530 ft. 16 in. c.i. main along Nicholas St. and Afton Parkway to replace wood-stave force main, altering pit and installing ... screen and sluice gates at sewage pump ... Harris St. near Afton Parkway, Va. ... $34,500. **FWA.** Plans deposit $10. R. S. Reed, Builders Exchange Bldg., Richmond, consult. engr. CD 10/6—ENR 10/14.

Bids Asked December 17

†Ill., Seneca—Federal Works Agency, ... Wacker Dr., Chicago, sewers, sewage treatment plant, incl. lateral and interceptor sewer, Imhoff tank, etc., Ill. 11-258. $157,... McCoy & Mulford, 1541 Chicago Rd., Chicago Heights, engrs. CD 9/28—ENR 9/30.

Wis., Brookfield—Greenfield Heights Sanitary Dist., R 5, Waukesha, 11,684 ft., 6 and ... in. vitr. clay sanitary sewers, pump. station, roadways, piping, sewage treatment plant. Plans deposit $10. H. C. Webster & Son, ... N. 2 St., Milwaukee, engrs. CD 7/13—ENR 7/15.

Bids Asked December 20

Pa., New Castle—C. E. Brown, city ... City Bldg., sewage disposal plant, ... alterations, caulking 48 in. concrete ... sewer, gunite lining 48 in. concrete ... and bypass sewer, 1 story, 13x18 ft., ... pre-chlorination bldg. addn., etc. Haven ... Emerson, 1140 Leader Bldg., Cleveland, ... engrs.

Bids Asked December 21

†N. Y., Mineola—J. Russel Sprague, ... executive, Nassau Co., in chambers of ... Supervs., Old County Court House, Franklin Ave., storm sewer for Horse Brook drain, ... branch, from Fulton St. Hempstead, ... to Stewart Ave., Garden City, War Pub. Works Project N. Y. 30-248, Nassau County ... 801-K. Plans deposit $10. C. F. Strohson, ... adv. ENR 12/9

Bids Asked December 22

California—State Div. Hys., G. T. McCarthy, engr., Sacramento, installing 1.3 mi. ... age pipe in Washington Ave. between ... Leandro and San Lorenzo, Alameda Co.

Bids Asked About December 24

†Conn., Bridgeport—City Dpt. P. Wks., ... Hall, Contr. 9, trunk and storm sewer ...

ERS, etc. (Bids Asked, Cont'd.)

St. Over $25,000. H. L. Rowland, city CD 11/30—ENR 12/2.

Bids Asked December 28

Y., New York—Dpt. P. Wks., Municipal Zone 7, completion construction of ge sys. in storage areas under approach sciuszko Bridge over Newtown Creek. deposit $5.

BIDDERS

., Hartford—City Bd. Contr. & Supply, ain St., Nov. 30, Contr. 23, 692 ft. sewer en Hudson and Trumbull Sts., bed of River, incl. manholes, small sewer lines, F. B. O'Neil, 22 Preston St., $57,676. 1/23.

M., Bayard—L. Peipelman, mayor, City Nov. 26, sanitary sewerage collection NM 29-123, from Panhandle Constr. Co., ock, Tex., $51,670. FWA. CD 11/3—ENR

TRACTS AWARDED

., Phenix City—City, Nov. 23, exten. ary sewer, Ala. 1-190, to Schley Gordy, Hilton Ave., Columbus, Ga., $40,656. 11/23. CD 11/17.

., Nashville—State Dpt. Institutions, G. Jean, purch. agt., 404 State Office sewers, other outside facilities at erculosis Hospital, near here, to Bush Co., 905 8 Ave. North, $48,000. Marr lman, Stahlman Bldg., archts. Awarded CD 11/5.

., Pasadena—Federal Works Agency, ric Bldg., Fort Worth, sewer and water vs., Tex. 41-246, to H. Nodland, Starbuck, $51,111. Est. $75,000. CD 10/26—ENR

., Portsmouth—A. S. Owens, city mgr., Hall, 8,960 ft. 15- to 42 in. concrete sewers, 4,133 sq. yd. 4 in. concrete alks, Va. 44-324, to Calnaught Contg. 328 Detroit St., $61,896. Est. $85,000. Bids 11/18. CD 11/8—ENR 11/11.

., Kingston—Pub. Utilities Comn., D. engr., City Hall, installing 27 in. storm sewer in conjunction with installation watermain from King to Union Sts., to ell Constr. Co. Ltd., 56 Rand St., Kirk- Lake. Est. about $55,000.

., Long Branch (Postal Dist. Toronto)— cipality, J. O. Elton, reeve, 1513 Lake Rd., sewage treatment plant addns., to ay Contracting Co., Ltd., 39 Indian Rd., ent, Toronto. Gore & Storrie, 1130 Bay Toronto, engrs. CD 9/23—ENR 9/30.

BRIDGES

ASKED

Bids Asked December 16

Y., New York—President Manhattan Boro, ipal Bldg., Zone 7, replacing roller nests, ling sliding seats, and reconstructing side Dr. Viaduct, from 200 ft. south of lair Pl. to 135 St. Bids 11/29 rejected. deposit $5. CD 11/9—ENR 11/11.

TRACTS AWARDED

J., Iselin—The Pennsylvania R. R., C. E. s, ch. engr. Pennsylvania Station, New N. Y., bridge, arch raising headwalls, -walls, cement beams, to Brann & Stuart Broad St. Station Bldg., Phila., Pa., 0.

klahoma—U. S. Eng., 231 W. Main St., on, Tex., concrete, steel bridge, to Cun- am & Reece, 208 Grain Exchange Bldg., a, Neb., $110,000.

lahoma—State Hy. Dpt., Oklahoma City, shing 6 span railroad bridge steel for rs Arkansas River bridge at Webber Sequoyah Co., to Pinsker & Anderson, ogee, $39,500. Est. $39,600. Awarded B. E. Clark, Oklahoma City, state hy.

Okla., Madill—U. S. Eng., 231 W. Main t., Denison, Tex., superstructure of hy. e over Washita River, on Hy. 70, Mar- Co., vicinity of Red River Dam zone, to on & Cunningham, and Paul B. Reis 208 Grain Exchange Bldg., Omaha, Neb., 45. Awarded 11/26. CD 7/30—ENR 8/5, Post War, Bridges, etc.

., Racine—Chicago, North Shore & Mil- ee R. R. Co., J. S. Hyatt, ch. engr., 72 dams St., Chicago, Ill., substructure for urban railway bridge, to Herlihy-Mid ent Co., 140 S. Dearborn St., Chicago, Est. $40,000.

., South Milwaukee—Chicago, North & Milwaukee R. R. Co., J. S. Hyatt, ch. 72 W. Adams St., Chicago, Ill., sub- ure for interurban railway bridge, to ny.-Md Continent Co., 140 S. Dearborn Chicago, Ill. Est. $40,000. CD 8/3—ENR

STREETS AND ROADS

ASKED

Bids Asked December 14

o—State Hy. Dpt., Columbus, grading, age structures, concrete paving 0.929 mi. Sect. Lockland of SH 987, Hamilton Co.; grading, drainage structures, waterbound macadam widening, bituminous resurfacing 4.339 mi. Sects. G and H of SH 278, US 6, Wood Co.; grading, drainage structures, bituminous surface treating and asphaltic concrete resurfacing 3.682 mi. Sects. E and Hicksville of SH 304, Defiance Co., $50,500; asphaltic concrete resurfacing 6.294 mi. Sects. A, B, C and D of SH 56, Lucas Co., $88,800; 0.441 mi. Sect. Akron of SH 66, Summit Co., $12,300; 0.101 mi. Sect. Athens of SH 159, US 33 and 5, Athens Co., $3,850; 3.094 mi. Sects. Crooksville, B, D of SH 350, Perry Co., $50,200; removing existing floor and installing creosoted strip floor on bridge over Salt Creek, Sect. H of SH 554, Hocking Co., $6,400; replacing present timber floor with 6 in. creosoted timber floor, raising floor stringers, modifying pier and abutment, caps and backwalls, bridge over Tuscarawas River, 0.0928 mi. Sect. 1 of SH 413, US 36, Tuscarawas Co., $23,360.

Bids Asked December 15

Louisiana—D. Y. Smith, dir. State Dpt. Hys., Baton Rouge, furnishing, del. 5,175 cu. yd. washed gravel, SP 703-00-65, Jefferson Davis Parish.

Bids Asked December 17

Arkansas—J. H. Crain, chn. State Hy. Dpt., Little Rock, constructing 0.32 mi. Ironton Access Rd., Defense Access Proj. DA-RM-17-B(1), Pulaski Co. W. W. Mitchell, Little Rock, state hy. engr.

Bids Asked December 21

★**Oregon**—State Hy. Comn., Portland, constructing 13 mi. new road, surfacing 47 mi. road north from Scotts Butte, Malheur Co., to complete Oregon-Nevada-Idaho Hy. $600,000. W. H. Lynch, Federal Bldg., Portland, archt.

Bids Asked December 23

California—State Div. Hys., G. T. McCoy, hy. engr., Sacramento, asphaltic concrete and plant mix surfacing Figueroa St. between Abod St. and Riverside Dr., Los Angeles Co.

Bids Asked

Iowa—State Hy. Comn., Ames, received no bids Nov. 29, maintenance concrete crushing 5,000 cu. yd. Sect. 36-70-3, Proj. M-5250, Des Moines Co. Under $25,000. F. R. White, Ames, ch. engr. CD 11/23.

LOW BIDDERS

Alabama—State Hy. Dpt., Montgomery, Nov. 23, imprvs. 6.178 mi. Escambia Co., from Morris Constr. Co., Columbus, Ga., $155,095. CD 11/12.

Alabama—State Hy. Dpt., Montgomery, imprv. 4.452 mi. Morgan Co., from Wright Contg. Co., Columbus, Ga., $163,756. CD 11/10.

†**District of Columbia and Maryland**—Pub. Rds. Admin., 1440 Columbia Pike, Arlington, Va., Dec. 4, Proj. D-2, Military Hy., District of Columbia to Camp Springs, Md., bridge over Mayhew Rd., from Guy H. Lewis & Sons, McLean, Va., $80,203. CD 12/1.

Illinois—Dpt. P. Wks. & Bldgs., Div. Hys., Springfield, Nov. 30, imprv. 1.49 mi. Franklin Co. from Chas. B. Cochran Corp., Warder Bldg., Marion, $88,506. CD 11/24.

CONTRACTS AWARDED

†**Massachusetts**—U. S. Eng., 819 Industrial Trust Bldg., Providence, R. I., paving, reclamation yard, Hampden Co., to Lane Constr. Co., 37 Colony St., Meriden, Conn. Est. under $50,000.

N. J., Wanaque—North Jersey Distr. Water Supply Comn., bituminous pavement on top of Raymond Dam and other imprvs. at head work and preparing subgrade, etc., to United Constr. Co., Inc., 631 Main Ave., Passaic, $25,000.

Oklahoma—State Hy. Dpt., Oklahoma City, grading, drainage, concrete paving 1.971 mi. Douglass Blvd. from Reno to S. E. 29 St., Oklahoma City, Oklahoma Co., to Moran & Buckner, Security Bldg., Muskogee, $145,102. Est. $156,000. Bids 11/16, awarded 11/18. B. E. Clark, state hy. engr.

†**Tex., Randolph Field**—U. S. Eng., Fort Sam Houston, asphalt paving Boundary Rd., to Cage Bros. & J. F. Malcolm, Sunset Rd., San Antonio, approx. $25,000.

Ont., Billings Bridge (Postal Dist. Ottawa)—Dominion Government, Ottawa, road construction, to L. T. Martin, Ltd., 56 Spark St., Ottawa, $25,000. Dpt. Munitions & Supply, Ottawa, engr.

Ont., Ottawa—Dpt. National Defense (Army), Ottawa, road at proving grounds, Gloucester Twp., near here, to L. T. Martin, Ltd., 519 Ottawa Electric Bldg., Sparks St., $25,000.

Ont., Windsor—Reconstructing pavements in lanes of municipality, day labor. $50,000. R. J. Desmarais, City Hall, engr.

EARTHWORK, WATERWAYS

PROPOSED WORK

Illinois—State Div. Waterways, 188 W. Randolph St., Chicago, rejected bids, removing shoals, dredging channels along northwesterly shore of Nippensink Lake in Fox Chain-of-Lakes, Lake Co., and removing shoals from bed Fox River immediately downstream from McHenry Dam, McHenry Co. CD 11/3—ENR 11/11, under LB.

Pa., Morrisville—State, Bourse Bldg., Phila., bulkheading piers and channel dredging of Delaware River to new proposed landbase for Penna. Nautical & Maritime School, $162,000.

Tex., Galveston—Galveston Co. Water Control Dist. 5, supply line from San Jacinto River to supply industries in Dist. 5 zone. Over $15,000.

Ont., Ottawa—J. R. Booth, Ltd., K. O. Roos, secy., 6 Booth St., 150 lin. ft. close face timber crib rock, rock fill, along south bank of Ottawa River. About $25,000.

Que., Quebec City — Municipality, F. X. Chouinard, city clk., filling St. Michel and Lauret Streams, $75,000. E. Hamel, City Hall, engr.

BIDS ASKED

Bids Asked December 14

Illinois—State, Div. Waterways, 201 W. Monroe St., Springfield, 72 in. gravity outlet pipe and rein.-con. control structure, appurtenances through river levee on west bank Illinois River, 1½ mi. southwest of Meredosia, in McGee Creek Levee & Drainage Dist., Pike Co. Over $15,000.

Ohio—State Hy. Dpt., Columbus, channel protection on Sect. Mansfield of S. H. 501, U. S. 30 N, Richland Co. $32,200.

LOW BIDDERS

†**Washington**—Bureau of Reclamation, Denver, Colo., Nov. 26, furnishing, del. in stock piles, 30,500 tons sand and 25,500 tons coarse aggregate for Yakima Ridge Canal, Roza Div., Yakima Project, Spec. 1708 D, from Curtis Gravel Co., Kennewick, $70,980. CD 11/9 ENR 11/11.

CONTRACTS AWARDED

†**Tex., Matagorda**—U. S. Eng., 25 St. and Avenue F, Galveston, dredging approx. 300,000 cu. yd. Matagorda Bay to South Bay, to Standard Dredging Co., 80 Broad St., New York, N. Y., at 7.39c. per cu yd.

Que., Baie St. Paul—Quebec Streams Comn., Notre Dame St. E., Montreal, concrete retaining walls, day labor under supervision of H. Tremblay, Town Hall. Est. $25,000.

UNCLASSIFIED

PROPOSED WORK

Ark., Hot Springs—AIRPORT BLDG., etc.—City, administration bldg., hangar at municipal airport. $150,000. Erhart & Eichenbaum, Pyramid Bldg., Little Rock, archts. CD 11/8—ENR 11/11.

★†**Calif., Alturas** — AIRPORT — Civil Aeronautics Admin., 1500 4 St., Santa Monica, rejected bids Sept. 20, Prop. N64-85, airport, 8 mi. northwest of here. CD 9/27—ENR 9/30, under LB.

Calif., Richmond—SHIPYARD BUILDING—Permanente Metals Corp., Richmond, compressor and paint shop bldg. at Yard 2.

†**Colorado**—TAXIWAYS—U. S. Eng., 909 17 St., Denver, bids as soon as new directive is received for asphalt on stabilized base taxiways, widening. $100,000. CD 11/24, under BA.

★**Colo., Leadville**—RAILROAD TUNNEL—The Denver & Rio Grande Western R. R. Co., A. E. Periman, ch. engr., Rio Grande Bldg., Denver. 2,000 ft. railroad tunnel, near here. $800,000.

Conn., Hartford—SWIMMING POOL—City, Dpt. Parks, City Hall, rein.-con. swimming pool, purification facilities, etc. Over $25,000.

Ia., Boone—AIRPORT—F. W. Ganoe, mayor, City Hall, municipal airport. $50,000.

Ia., Davenport—RECREATION CENTER—Mississippi Valley Amusement Park, Inc., Davenport, developing Mississippi Valley fairgrounds into community recreation center. $75,000.

★**Ia., Iowa Falls**—POWER IMPROVEMENTS—Central States Electric Co., C. C. Clarke, mgr., Iowa Falls, power expansion, improv. project, $1,000,000.

Louisiana—OIL WELL, etc.—J. F. Belt, Lake Charles, drilling, casing, developing 6,000 ft. test oil well, ground storage facilities, Catahoula Parish. Over $25,000.

Louisiana—OIL WELL, etc.—Humble Oil & Refin. Co. and Continental Oil & Gas Co., Oil & Gas Bldg., Houston, Tex., developing deep test oil well, ground storage facilities, Reddell area, Evangeline Parish. Over $25,000.

Louisiana—OIL WELL, etc.—McClanaghan & Clark, Giddens-Lane Bldg., Shreveport, drilling, developing new 7,000 ft. test oil well, ground storage, etc., Caddo Parish. $25,000.

UNCLASSIFIED (Proposed Work Cont.d.)

Louisiana—OIL WELL—Placid Oil Co., City Bank Bldg., Shreveport, drilling, casing, developing 11,500 ft. test oil well, ground storage facilities, etc., La Salle Parish. Over $25,000.

Louisiana—OIL WELL—Sugarfield Oil Co., Giddens-Lane Bldg., Shreveport, drilling, developing test oil well 10,000 ft., Iberville Parish. Over $25,000.

Louisiana—OIL WELL, etc.—Texas Co., 720 San Jacinto St., Houston, Tex., drilling, casing, developing 11,000 ft. test oil well, surface line, earthen storage facilities, etc., Vermilion Parish. Over $25,000.

Louisiana—OIL WELL, etc.—Union Oil Co., Commerce Bldg., Houston, Tex., drilling, casing, developing 9,000 ft. test oil well, ground storage facilities, Vermilion Parish. Over $25,000.

Mo., Columbia—AIRPORT EXPANSION—City, airport expansion, enlarging runways, grading, drainage and paving. $55,000. Applied to CAA. D. Welch, Columbia, city engr. CO 11/15—ENR 11/18.

★**Montana**—TUNNEL—Northern Pacific Ry. Co., B. Blum, ch. engr., 176 E. 5 St., St. Paul, Minn., soon lets contract, tunnel through Bozeman Pass between Livingston and Bozeman, $1,000,000. CD 11/30—ENR 12/2.

N. Y., Babylon—DOCK IMPROVEMENTS—Village Clerk, Municipal Hall, dock imprvs.

N. C., Elizabeth City—AIRPORT—City, J. Flora, mayor, and Bd. Comrs. Pasquotank Co., N. Burfoot, chn., Elizabeth City, airport exten.

N. C., Kinston—AIRPORT—City, J. R. Sams, mayor, and Bd. Comrs. Lenoir Co., W. L. Measley, chn., La Grange, exten. municipal airport.

†Okla., Oklahoma City—LOW PRESSURE CHAMBER BLDG.—U. S. Eng., 416 Wright Bldg., Tulsa, Zone 2, imprvs., low-pressure chamber bldg., Will Rogers Field zone, Sol. 34-066-44-30.

Pennsylvania and New York—OIL WELLS, etc.—South Penn Oil Co., South Penn Bldg., Bradford, Pa., drilling 100 or more 1,700 to 1,800 ft. wells, connecting 7 gathering pipelines, steel tank storage facilities, pump. plants, power stations, etc., Warren and McKean Counties, Pa., and Allegany Co., N. Y. Over $100,000.

Pa., Franklin—OIL WELL—Venango Development Co., c/o Quaker State Oil Refining Co., Oil City, digging circular shaft 400 ft. and mining oil from bottom at top of Venango oil sand, near here. Over $35,000.

Pa., Morrisville — LANDBASE — State, Bourse Bldg., Phila., new landbase, incl. personnel and students' quarters, etc., of Penna. State Nautical & Maritime School. $300,000.

Texas—OIL WELL, etc.—Barnsdall Oil Co., Esperson Bldg., Houston, drilling new 7,500 ft. test oil well, ground storage facilities, 2 mi. east of Elam, Bowie Co. Over $25,000.

Texas—OIL WELL, etc.—J. H. Burt, Seguin, drilling, casing, developing 2,200 ft. test oil well, ground storage, 3 mi. north of Lavernia, Guadalupe Co.

Texas—OIL WELL—Continental Oil Co., Oil & Gas Bldg., Houston, drilling, developing new 7,000 ft. test oil well, earthen storage facilities, etc., 5 mi. north of Edroy, San Patricio Co. Over $25,000.

Texas—OIL WELL—Sun Oil Co., Esperson Bldg., Houston, drilling, casing, developing new 6,000 ft. test oil well, ground storage, Sand Flat (2 mi. south) Smith Co. Over $25,000.

Texas—OIL WELL, etc.—Humble Oil & Refining Co., Humble Bldg., Houston, drilling, developing 7,700 ft. test oil well, ground storage facilities, Imogene field area, Atascosa Co. Over $25,000.

Texas—OIL WELL, etc.—Humble Oil & Refining Co., Humble Bldg., Houston, drilling, developing new 6,000 ft. test oil well, ground storage facilities, etc., North Magnolia Field area, Jim Wells Co. Over $25,000.

Texas—OIL WELL—Phillips Petroleum Co., Esperson Bldg., Houston, drilling, developing new 4,500 ft. test oil well, Ibex Pool, Stephen Co. $25,000.

Texas—OIL WELL, etc.—Texas Conservative, et al, Sinton, drilling, developing new 5,400 ft. test oil well, ground pits, etc., Edroy, San Patricio Co.

Texas—OIL WELL—Marts & Beaven, Liberty Bank Bldg., Dallas, drilling, developing 3,000 ft. test oil well, storage facilities, 1 mi. northeast of Rochne, Bastrop Co.

Texas—OIL WELL, etc.—Texas Co., 7200 San Jacinto St., Houston, 7,500 ft. test oil well, earthen storage facilities, Humble Dome area, Harris Co. Over $25,000.

Texas—OIL WELL, etc.—W. W. West, Sterling Bldg., Houston, casing 6,500 ft. test oil well, earthen storage facilities, Davis Hill Dome area, Liberty Co. Over $25,000.

Tex., Alice—OIL WELL—Evetts & Jones, Alice, drilling, developing 5,500 ft. test oil well, casing, ground storage, etc. Over $25,000.

Tex., Alice—OIL WELL—W. C. Goldston, Oil & Gas Bldg., Houston, drilling, developing 2 new 6,000 ft. test oil wells, earthen storage, facilities, fuel line. Over $25,000.

Tex., Anahuac—OIL WELL, etc.—C. E. Gates, et al., 5734 Rio Vista, Houston, drilling, developing new 8,000 ft. test oil well, ground storage, etc. Over $25,000.

Tex., Andrews—OIL WELL—Humble Oil & Refining Co., Humble Bldg., Houston, drilling, developing new 7,000 ft. test oil well. Over $25,000.

Tex., Andrews—OIL WELL—Signal Oil & Gas Co., Andrews, drilling, developing new 5,500 ft. test oil well, ground storage facilities, 5 mi. north of here. Over $25,000.

Tex., Antelope—OIL WELL, etc.—L. T. Burns Associates, Jacksboro, drilling, developing 6,800 ft. test oil well, earthen pits, fuel line, etc., 2 mi. northeast of here. Over $25,000.

Tex., Antelope—OIL WELL, etc.—Hanlon-Buchanan, Inc., Petroleum Bldg., Houston, developing 600 ft. test oil well, ground storage pits, fuel line, 5 mi. south of here. Over $25,000.

Tex., Arcola—OIL WELL—Salt Dome Oil Corp., Esperson Bldg., Houston, developing 8,500 ft. test oil well. Over $25,000.

Tex., Arp—SALT WATER INJECTION WELL—East Texas Salt Water Disposal Co., Tyler, salt water injection well, $75,000.

Tex., Bastrop—OIL WELL—J. D. Andrews, et al., drilling, developing 2,000 ft. test oil well.

Tex., Beeville—OIL WELL—Continental Oil Co., et al., Oil & Gas Bldg., Houston, drilling, casing, developing new 6,600 ft. test oil well. Over $25,000.

Tex., Beeville—OIL WELL—Tom Slick & Associates, Milam Bldg., San Antonio, drilling, casing, developing new 6,700 ft. test oil well, ground storage facilities. Over $25,000.

Tex., Blanconia—OIL WELL—Windsor Oil Co., National Standard Bldg., Houston, drilling, casing, developing 5,000 ft. Vicksburg Zone test oil well. Over $25,000.

Tex., Breckenridge—OIL WELL, etc.—Phillips Petroleum Co., Esperson Bldg., Houston, drilling, developing 6,500 ft. test oil well, ground storage, etc. Over $25,000.

Tex., Bruni—OIL WELL, etc.—J. B. Burton, et al., Laredo, drilling, developing new 7,000 ft. test oil well, earthen storage. Over $25,000.

Tex., Bryson—OIL WELL—D. L. Johnson & Associates, 4408 San Carlos Driv., Dallas, drilling, developing 3,300 ft. test oil well, storage, 6 mi. northeast of here.

Tex., Bunger—OIL WELL—Elliott Production Co., et al, New Castle, drilling, developing 4,500 ft. test oil well, fuel line. $25,000.

Tex., Cameron—OIL WELL, etc.—Stanolind Oil & Gas Co., Gulf Bldg., Houston, developing new deep test oil well, earthern storage, facilities, Cameron Field Area, Starr Co. Over $25,000.

Tex., Childress—OIL WELL, etc.—Humble Oil & Refining Co., Humble Bldg., Houston, 6,000 ft. oil well 9⅝ in. pipe, fuel line, etc., rotary drilling. Over $25,000.

Tex., Clodine—OIL WELL, etc.—Providence Oil Co., Gulf Bldg., Houston, drilling, developing 7,600 ft. test oil well, earthen storage facilities. Over $25,000.

Tex., Crane—OIL WELL—Gulf Oil Co., 2 and Santa Fe Sts., Dallas, developing 9,000 ft. test oil well. Over $25,000.

Tex., Crane—OIL WELL, etc.—Schermerhorn Oil Co., Monahans, 4,600 ft. test oil well, storage facilities, northwest of here.

Tex., Crockett—OIL WELL, etc.—Continental Oil Co., Oil & Gas Bldg., Houston, drilling, developing another deep test oil well, ground storage facilities, 18 mi. west of here. Over $25,000.

Tex., Crockett—OIL WELL, etc.—Cox & Butler, Tower Petroleum Bldg., Dallas, drilling, casing, developing 3,000 ft. test oil well, storage facilities, 8 mi. south of here. $25,000.

Tex., Edinburg-Mission—OIL WELLS—Sun Oil Co., Esperson Bldg., Houston, drilling, casing, developing 2 new deep test oil wells, incl. roads, etc. $90,000.

Tex., Gainesville—OIL WELL, etc.—Burk Royalty No. 1, Holcomb, Gainesville, drilling, casing, developing 5,000 ft. test oil well, ground storage facilities, 4 mi. east of here. Over $25,000.

Tex., Gainesville—OIL WELL, etc.—F. W. Lausen & C. L. Wagner, Gainesville, drilling, developing 6,000 ft. test oil well, storage, etc., 5 mi. southeast of here.

Tex., Ganado—OIL WELL, etc.—Boyd & Mayo, et al, Edna, drilling, developing 6,800 ft. test oil well, using steel pipe, earthen storage facilities. Over $25,000.

Tex., Ganado—OIL WELL, etc.—Mayo & Boyle, et al, c/o Pan-American, Esperson Bldg., Houston, drilling, casing, developing 2 new deep test oil wells, ground storage facilities. Over $25,000.

Tex., Golden—OIL WELL, etc.—Mon... et al, 3903 Main St., Dallas, drilling, dev... ing deep test oil well, stor... ge facilities, ... northwest of here. $25,000.

Tex., Goliad—OIL WELL—R. J. St. Ger... et al, developing new 8,... ft. outpost ... oil well, storage facilities. Over $25,000.

Tex., Goliad—OIL WEL... etc.—Trans... ern Oil Co., Milam Bldg., San Antonio, ... ing, casing, developing 7,... ft. test oil ... ground storage facilities. ...ver $25,000.

Tex., Graham—OIL WELL—Brown-... cock, et al, Kirby Bldg., Dallas, drilling, ... veloping 4,800 ft. test oil well. $25,000.

Tex., Grapeland—OIL WELL—Geier B... Inc., and F. B. Jackson, Jr., Gulf States B... Dallas, drilling, developing new 6,000 ft. ... oil well, 5 mi. west of here. Over $25,0...

★**†Tex., Harlingen**—AIRFIELD FACILI... —U. S. Eng., 25 St. and Ave. F, Galve... addnl. housing, parking apron and exten... ways and taxiways at Laguna Madre sub... of Harlingen Army Air field. $592,670.

Tex., Henderson—SALT WATER DISPO... WELL, etc.—J. H. Moyar, et al., Hende... salt water disposal well, facilities. ... $25,000.

Tex., Holliday—OIL WELL—G. W. Co... & Associates, Archer City, drilling, casing, ... veloping another 5,000 ft. test oil well, gr... storage facilities. Over $25,000.

Tex., Holliday—OIL WELLS, etc.—G... Kadene & Sons, Wichita Falls and Ar... City, drilling, casing, developing five 1,... test oil wells, ground storage facil... $100,000.

Tex., Jacksboro—OIL WELL—Champlin ... fining Co., Magnolia Bldg., Dallas, dri... developing 3,500 ft. test oil well.

Tex., Jacksboro—OIL WELL, etc.—... Pot Oil Co. et al, Jacksboro, drilling, ... veloping 6,000 ft. cable-tool test oil ... ground storage facilities, 14 mi. northwe... here. Over $25,000.

Tex., Jacksboro—OIL WELL—S. & R. ... Co., Jacksboro, drilling, developing 3,5... test oil well.

Tex., Justiceburg—OIL WELL—M. L. R... ards & R. E. Carter, Lubbock, drilling, de... oping new 3,300 ft. test oil well.

Tex., Karnes City—OIL WELL, etc.—... Plummer, et al, Karnes City, drilling, deve... ing new 3,500 ft. test oil well, storage fa... ties. Over $25,000.

Tex., Kildare—OIL WELL—Texas Co., e... 2310 S. Lamar St., Dallas, developing ... ft. test oil well, Kildare Field, Cass Co. ... $25,000.

Tex., La Vernia—OIL WELL—J. H. B... et al, Electric Bldg., Houston, developing ... 2,000 ft. test oil well.

Tex., Littlefield—OIL WELL—E. Constan... Jr., & Associates, Continental Bldg., Da... drilling, casing, developing 7,000 ft. test ... well, ground storage. Over $25,000.

Tex., Luling—OIL WELL—Starr & McG... drilling, developing 4,500 ft. test oil we... mi. east of here. $25,000.

Tex., Luling—OIL WELL, etc.—C. E. S... & H. P. McQuirt, et al, Luling, 3,300 ft. ... oil well, ground storage facilities, 6 mi. no... east of here.

Tex., Marshall—OIL WELLS, etc.—Sta... Oil Co., Esperson Bldg., Houston, drilling, ... veloping 1 or more deep test oil wells, ca... en storage, fuel lines. Over $25,000.

★**†Tex., Matagorda**—TAXIWAYS, etc.—... Eng., 25 St. and Avenue F, Galveston, ... ening existing taxiways, addnl. runways ... parking apron, Matagorda Peninsula Bom... Range. Est. $500,000.

Tex., Mathis—OIL WELL—Plymouth ... Co., Corpus Christi, drilling, casing, deve... ing 2 new oil wells. Over $25,000.

Tex., Mertzon—OIL WELL—Shell Oil ... Shell Bldg., Houston, drilling, developing ... ft. test oil well. Over $25,000.

Tex., Monahans—OIL WELL, etc.—Sta... Oil Co., Continental Bldg., Dallas, drill... developing 3,500 ft. test oil well, storage ... cilities, 5 mi. west of here. $25,000.

†Tex., Nacogdoches—AIRPORT—City, ... pleting airport. Over $100,000. CAA.

Tex., Nada—OIL WELL—The Ohio Oil ... Oil & Gas Bldg., Houston, drilling, cas... developing 6,700 ft. test oil well, storage ... cilities, etc., 4 mi. west of here. Over $25,...

Tex., Nugent—OIL WELL—Hickok & Be... olds and J. Gallagher, Anson, develo... 1,950 ft. test oil well.

Tex., Oklaunion—SALT WATER DISPO... WELL—Phillips Petroleum Co., Esper... Bldg., Houston, salt water disposal well. ... $25,000.

Tex., Pettus—OIL WELL—H. B. Zach... P. O. Box 596, San Antonio, and Superio... Corp., Commerce Bldg., Houston, drilling, ... ing, developing 7,000 ft. test oil well, gr... storage, northwest of here. Over $25,...

Tex., Pineland—OIL WELL—Delta Oil ... et al., Pineland, drilling, developing 5,0... test oil well, 2 mi. southwest of here. ... $25,000.

ASSIFIED (Proposed Work, Cont'd.)

Plains—OIL WELL—Hickok & Rey- et al., Plains, drilling, developing new ft. test oil well, storage facilities, fuel mi. northwest of here. Over $25,000.

Pt. Isabel—OIL WELL, etc.—Great Carbon Co., et al, Corpus Christi, de- 11,000 ft. test oil well, earthen stor- facilities, etc., 5 mi. south of here. Over

Post—OIL WELL, etc.—N. L. Rich- Big Spring, Tex., and R. E. Carter, delet Bldg., New Orleans, La., drilling, developing 3,300 ft. cable test oil ground storage facilities, 5 mi. southeast re.

Quitman—OIL WELL, etc.—Shell Oil Shell Bldg., Houston, developing new ft. test oil well, surface casing earthen e facilities. Over $25,000.

Realitos—OIL WELL, etc.—Geo. W. Gulf Bldg., Houston, drilling, de- new 4,000 ft. test oil well, ground e facilities. $25,000.

Refugio—OIL WELL, etc.—Refugio Co., Refugio, drilling, developing new ft. test oil well, ground storage. $45,000.

Refugio—OIL WELL—F. M. Wood, Refugio, drilling, developing new 6,500 t oil well, ground storage facilities, fuel Over $25,000.

Richmond—OIL WELLS—H. M. Nay- Oil Co., Second National Bank Bldg., on. drilling, casing, developing 4 new il wells. Over $25,000.

Robstown—OIL WELL, etc.—C. P. on, et al, Robstown, developing new 7,300 t oil well, ground storage. Over $25,000.

Robstown—OIL WELL—S. E. Wilson, 00 Clower St., San Antonio, drilling, de- ing new 7,500 ft. test oil well. Over 0.

Roma—OIL WELLS—Sun Oil Co., Es- Bldg., Houston, drilling, casing, devel- 4 more oil well tests, 2,900 to 5,800 ft. Over $25,000.

Saint Jo—OIL WELL, etc.—S. D. on, et al., Ringgold, developing 6,500 ft. il well, earthen pits, etc. $25,000.

Saint Jo—OIL WELL—Seitz-Comegys itz, et al, Saint Jo, drilling, developing ft. test oil well, fuel line, 20 mi. north of Over $25,000.

Seguin—OIL WELL—W. H. Bird, et guin, drilling, developing 3,000 ft. test ell, 8 mi. south of here.

Simmons City—OIL WELL—E. M. et al., Tilden, drilling, developing 2 3,500 ft. test oil wells, McMullen Co., 10 northeast of here. Over $25,000.

Sinton—OIL WELL, etc.—Seaboard Co., Continental Bldg., Dallas, drilling, oping new oil well, earthen storage fa- s. $25,000.

Smithville—OIL WELL—J. D. An- et al, drilling, developing 2,000 ft. il well, 1 mi. south of here.

Sourlake—OIL WELL, etc.—Sun Oil Esperson Bldg., Houston, drilling 10,000 t oil well, fuel line, earthen storage fa- s. Over $25,000.

Stowell—OIL WELL—Gulf Oil Co., Bldg., Houston, drilling, casing, develop- new 6,500 ft. test oil wells, ground e facilities. Over $25,000.

Tell—OIL WELL—Humble Oil & Re- Co., Humble Bldg., Houston, drilling, oping new 6,000 ft. test oil well. Over 0.

Three Rivers—OIL WELL—Chas. E. r, drilling, developing deep test oil well, south of here. Over $25,000.

Tokio—OIL WELL—E. N. Cain & L. L. Fort Worth, drilling, developing 5,500 t oil well, storage, 4 mi. north of here. $25,000.

Whitewright—OIL WELL, etc.— Mineral Land Co., Rep. Bank Bldg., developing 5,000 ft. test oil well, storage, fuel line. Over $25,000.

Wichita Falls—OIL WELL—Continen- l Co., Eagle Ford Bldg., Dallas, drilling, oping new 4,500 ft. test oil well.

Windthorst—OIL WELL, etc.—Wilcox Gas Co., Wichita Falls, drilling, develop- another 6,400 ft. test oil well, earthern e facilities. Over $25,000.

West Virginia—AIRPORT—Civil Aero- autics Admin., 14 St. and Constitution N.W., Wash., D. C., preliminary plans, rt construction, administration bldg., ars, grading, runways, drainage. $3,- 00.

Madison — PARKING LOTS — City, g lots, 1 at W. Mifflin and North Fair- Sts., and other between E. Wilson and ty Sts. Over $260,000, incl. sites.

Stevens Point—AIRPORT—City, A. L. oski, comptroller, City Hall, airport $300,000. Applying for federal funds.

†Wyo., Sheridan — AIRPORT RUNWAYS, etc.—Civil Aeronautics Admin., 410 E. 12 St., Kansas City, Mo., bids soon, airport runways, bldgs. $400,000.

B. C., Vancouver—FERRY FLOAT—Municipality, c/o D. G. Tate, clk., ferry float and landing dock in front of Lots 31 to 38, Burrard Inlet. $40,000.

B. C., Victoria—RAILWAY—Providence of British Columbia, Victoria, making surveys constructing railway connecting Pacific Coast with Peace River Dist. in northeastern sect. of province.

N. B., Saint John—AIRPORT—Municipality and Dominion Govt., Ottawa, Ont., enlarging airport facilities. Over $150,000. Dpt. Transport, Ottawa, Ont., engr.

N. B., Shediac—WHARF—Dominion Govt., Ottawa, Ont., public wharf. $35,000. Dpt. P. Wks., Ottawa, Ont., engr.

★**Nova Scotia**—AIR BASE—Secy. Dpt. Munitions & Supply, Ottawa, Ont., Maritime Air Base. $6,000,000.

Ont., Hamilton—APRONS—Dominion Govt., Ottawa, concrete aprons, Mount Hope Aerodrome. $40,000. Dpt. National Defense for Air, Lisgar Bldg., Ottawa, archts.

Ont., Owen Sound—AIRPORT—Acting Secy. Dpt. Transport, Ottawa, airport near here for land and water planes. About $150,000.

Ont., Sarnia—AIRPORT—City, W. C. Hipple, mayor, civic airport. $50,000. Ald. W. F. Crompton, c/o City Council, chn.

Que., Quebec City—PARK—Municipality, c/o F. X. Chouinard, city clk., park, off St. Louis St., just below Ste. Genevieve Ave. and completion DuAuteiul Exten. $25,000. E. Hamel, City Hall, engr.

BIDS ASKED

Bids Asked About December 15

†Minn., Duluth—AIRPORT GRADING, etc. Civil Aeronautics Admin., Transportation Bldg., 608 S. Dearborn St., Chicago, Ill., completion municipal airport, grading, topsoiling, draining, two 5,700 ft. and one 4,000 ft. runways to be paved 150 ft. wide. $400,000. CD 9/8—ENR 9/16.

Bids Asked December 15

†W. Va., Martinsburg — AIRPORT IMPROVEMENTS—Civil Aeronautics Admin., La Guardia Field, Jackson Heights, N. Y., airport imprvs. CD 9/22—ENR 9/30.

LOW BIDDERS

†Ariz., Willcox—AIRPORT—Civil Aeronautics Admin., 1500 4 St., Santa Monica, Calif., Nov. 24, airport imprvs., No. N64-140, from Isbell Constr. Co., P.O. Box 2351, Reno, Nev., **$385,520.** CD 11/16.

†Md., Patuxent River (br. Wash., D. C.) — TRANSPORTATION SERVICE BLDG. — Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., Nov. 29, navy transportation service bldg., NAS, NOY 7388, from Tuller Constr. Co., 95 Monmouth St., Redbank, N. J., **$373,740.** CD 11/22—ENR 11/11.

†Texas—IMPROVEMENTS—U. S. Eng., Fort Sam Houston, Nov. 24, imprvs., outside electric night lighting sys., facilities at San Marcos, Eagle Pass, Laredo and Abiline, from Empire Electric Co., 1015 Rosedale St., Fort Worth, approx, **$66,200.** CD 11/11.

†Tex., San Angelo—NIGHT LIGHTING FACILITIES—U. S. Eng., Fort Sam Houston, outside night lighting facilities, Del Rio-Goodfellow Field, from Sanford Constr. Co., P. O. Box 4188, Oklahoma City, Okla., **$36,600.**

CONTRACTS AWARDED

†Ala., Brookley Field—AIRFIELD BUILDING—U. S. Eng., Grant St. west of Westwood St., Mobile, Ala., addnl. temporary frame bldg., incl. utilities, Contr. 01-076-eng-97, to Algernon Blair, First National Bank Bldg., Montgomery, **$54,623.**

†Ala., Tuscaloosa — VENTILATING SYSTEM—U. S. Eng., Grant St. west of Westwood St., Mobile, mechanical ventilating sys., Ser. 201, to R. P. Farnsworth & Co., 1515 S. Salcedo St., New Orleans, La., **$43,902.**

†Ariz., Willcox—AIRPORT—Civil Aeronautics Admin., 1500 4 St., Santa Monica, Calif., Cochise Co., airport, No. N64-140, Schedule 1, to P D O C Constr. Co., 409 Luhrs Bldg., Phoenix, **$152,418;** Schedule 2, to Isbell Constr. Co., P. O. Box 2351, Reno, Nev., approx. **$200,000.** CD 12/1.

†California—WALLS, etc.—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., walls, gas pumps and tanks, A A S, at Santa Rosa, Concord, Vernalis, Crows Landing, Hollister and Watsonville, NOY 7532, to Pacific Electrical & Mechanical Co., 16 and Vermont Sts. San Francisco, **$34,900.**

†Calif., Muroc and March Field (br. Riverside)—IMPROVEMENTS—U. S. Eng., 751 S. Figueroa St., Los Angeles, Zone 14, imprvs., bldgs., utilities, No. 301, to Weymouth Crowell Co., 2104 E, 15 St., Los Angeles, **$52,964.**

†Calif., San Diego—EXTENSION—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., extension to house 2 link navigator trainers, N A S, NOY 7614, to H. H. Peterson, 3340 Harasthy St., **$28,672.**

†Calif., South San Francisco—MECHANICAL SERVICING, etc.—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., mechanical servicing, marine railway and gasoline storage, NAAF, Mills Field, NOY 6781, to Pacific Electrical & Mechanical Co., 467 O'Farrell St., San Francisco, **$304,000.**

†Calif., Terminal Island—HANGAR—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., hangar completion, N.A.S., NOY 7972, to A. McNeil Constr. Co., 5860 Avalon Blvd., Los Angeles, **$398,322.**

†D. C., Anacostia—TAXIWAY, RESURFACING, etc.—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., resurfacing, widening taxiway and exten. concrete parking area, N A S, NOY 7816, to Potts & Callahan Contg. Co., Bowen Bldg., Wash., **$57,300.**

†Florida—TARGET RANGE—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, target range, Neg-Jax 44-106, Pinellas Co., to Nolan-Dickerson Constr. Co., Lakeland, **$47,407.** Awarded 11/24.

†Fla., Avon Park—RANGE FACILITIES—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, constructing course, surfacing drainage facilities course, Avon Park, Bombing Range, Highlands Co., to Okeechobee Constr. Co., 518 Phelps St., Jacksonville, Zone 1, **$55,100.** Awarded 11/29. CD 11/22—ENR 11/25.

†Fla., Ft. Meyers—AIRFIELD FACILITIES—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, constructing course, surfacing, drainage facilities, grassing, to Cleary Bros. Constr. Co., Georgia Ave., West Palm Beach, **$43,153;** water distr. and sewerage sys., to Ivy H. Smith Constr. Co., 5125 San Marcos Blvd., Jacksonville, Zone 7, **$132,580,** both at Buckingham Airfield, near here. Awarded 11/29.

†Fla., Marianna—IMPROVEMENTS—U. S. Eng., Grant St., west of Westwood St., Mobile, Ala., imprvs., addn. drainage facilitties, Ser. No. 215, Jackson Co., to Hodgson Concrete & Asphalt Co., N. Perry St., Montgomery, Ala., **$43,105.**

†Fla., Montbrook—AIRFIELD FACILITIES—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, constructing course, surfacing, paving and grassing, at Montbrook Airfield, to M. J. Carroll Contg. Co., Leesburg, **$39,300.** Awarded 11/29.

†Fla., Orlando—FACILITIES—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, addnl. facilities at Army Air Base, to Gabel Constr. Co., Orlando, and 216 Graham Bldg., Jacksonville, Zone 2, **$36,327.** Awarded 11/29.

†Fla., Pensacola—FIELD DEVELOPMENT—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., development of Choctaw Field, N.A.T.C., NOY 7663, to R. B. Tyler Co., Monroe, N. C., **$411,230.**

†Fla., St. Petersburg—GRASSING, etc.—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, grassing, drainage facilities, to W. H. Armston, Dunedin, **$31,637.** Awarded 11/29.

†Fla., Venice — AIRFIELD IMPROVEMENTS—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, excavating, lay water lines, manholes, etc., Venice AAF, Contr. 08-123-eng-118, to Gabel Constr. Co., Orlando, **$16,000.**

†Ga., Chatham Field—AIRFIELD BUILDINGS—U. S. Eng., Post Office Bldg., Savannah, addnl. bldgs., Contr. 09-133-eng-9, to Claussen & Webster, Augusta, **$307,959.**

†Idaho—CONSTRUCTION—U. S. Eng., Pittock Blk., S.W. 10 Ave. and Washington St., Portland, Ore., heavy construction, Elmore Co., to J. A. Terteling & Sons, Robert Noble Bldg., Boise, **$40,000.** Awarded 11/29.

†Ky., Fort Knox—AIRFIELD IMPROVEMENTS—U. S. Eng., 612 Federal Bldg., Louisville, excavation, pavement removal, paving, surfacing Godman Field, Contr. 15-029-eng-327, to Andrews-Collings Asphalt Co. and Breslin Constr. Co. Inc., 1801 S. Brook St., Louisville, **$113,804.**

†Ky., Fort Knox—FLIGHT HAZARD REMOVAL — U. S. Eng., 612 Federal Bldg., Louisville, removal of flight hazards, Contr. 15-029-Eng-326, to L. G. Arnold, Inc., Eau Claire, Wis. Est. **$25,431.**

†Mich., Centerline—SPRINKLER SYSTEM—U. S. Eng., 700 Union Guardian Bldg., Detroit, 31, installing overhead sprinkler sys., at Detroit Tank Arsenal, to Detroit Independent Sprinkler Co., 7338 Woodward St., Detroit, **$32,670.**

†Minnesota—AIRBASE BLDG.—U. S. Eng., 1709 Jackson St., Omaha, Neb., bldg. alterations, at airbase, Ramsey Co., to D. L. Witcher, 544 Builders Exchange, Minneapolis, Minn. Est. under **$50,000.**

†Missouri—AIRBASE BLDG.—U. S. Eng., 10 E. 17 St., Kansas City, Mo., remodeling warehouse, at airbase, Buchanan Co., to Lehr

UNCLASSIFIED (Contracts Awarded, Cont'd.)

Constr. Co., 2110 Frederick St., St. Joseph. Est. under **$100,000.**

†Nebraska—AIRBASE PAVING—U. S. Eng., 1709 Jackson St., Omaha, concrete paving, at airbase, Scotts Bulff Co., to O. Mann, Rapid City, S. D., under **$50,000.**

†Nebraska—IMPROVEMENTS—U. S. Eng., 1709 Jackson St., Omaha, imprvs., concrete pavement, Box Butte Co., to O. Mann, Rapid City, S. D. Est. under **$50,000.**

†N. H., Manchester—CLEARING—U. S. Eng., 31 St. James Ave., Boston, Mass., clearing, approach zones, removing trees, etc. No. 19-023-44-Neg-129, to Bartlett Tree Expert Co., 795 Memorial Dr., Cambridge, Mass. Est. **$45,000.** Bids 11/26.

†New Jersey—SPRINKLER SYSTEM—U. S. Eng., 120 Wall St., New York, 5, N. Y., sprinkler sys., various bldgs., Essex Co., to Rusling Co., 227 Fulton St., New York, N. Y., **$50,000.**

†N. M., Clovis—RANGES—U. S. Eng., 4 and Gold Sts., Albuquerque, ranges, at airfield, Curry Co., to S. H. Martin, Carlsbad, **$25,000.**

†N. C., Camp Butner (br. Durham) — FACILITIES—U. S. Eng., 308 Customhouse, Wilmington, addnl. facilities, Contr. 31-075-Eng-81, to F. D. Cline, Fairview Rd., Raleigh, **$26,785.**

†O., Wilmington — PARKING APRONS — U. S. Eng., Wright Field, Dayton, parking aprons at Wilmington Glider Test Field, to W. L. Johnson, Hicksville, under **$250,000.**

†O., Wright Field (br. Dayton)—CONVERTING and FACILITIES—U. S. Eng., Wright Field, converting and facilities, Contr. 33-046-Eng-62, to H. W. Miller, Covington, Ky., **$40,900.**

†Okla., Durant—PARKING APRON—U. S. Eng., 231 W. Main St., Denison, Tex., addnl. parking apron, to Morse Bros. & Associates, Durant, **$28,000.**

†Okla., Fort Sill—FENCE—U. S. Eng., 231 W. Main St., Denison, Tex., fence, etc., Comanche Co., to J. T. Chapman & Sons, Sapulpa, **$25,200.**

†Okla., Tulsa — FACILITIES — U. S. Eng., 416 Wright Bldg., Tulsa, Zone 2, addnl. facilities, Mod. Ctr. No. 16, Contr. 34-066-Eng-84, to Industrial Constr. Co., northeast of city, Tulsa, **$54,720.**

†Ore., Astoria—MAGAZINE FACILITIES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., magazine facilities, Auxiliary Air Station, Clatsop County Airport, NOY 6930, to J. Helstrom, 649 Jerome Ave., **$24,796.** CD 6/23.

†Tenn., Jackson—AIRFIELD FACILITIES—U. S. Eng., Grant St., west of Westwood St., Mobile, Ala., storm drainage sys. addn., relocating, installing boundary lighting sys. at airfield, to Bower & Johnson, 1st Natl. Bldg., under **$50,000.** Awarded 11/30.

†Tenn., Memphis—LIGHTING FACILITIES—U. S. Eng., Grant St., west of Westwood St., Mobile, Ala., lighting facilities, Ser. 210, to Guy-Townsend Co., Jackson, Miss., **$29,564.**

★**†Tex., Hensley Field (br. Dallas)**—RUNWAY, DRAINAGE, etc.—U. S. Eng., 321 W. Main St., Denison, drainage, paving for exten., reconstruction runways, to Texas Bitulithic Co., 111 W. Commerce St., Dallas, **$849,973.** CD 11/29—ENR 12/2, under LB.

†Tex., Camp Fannin—FACILITIES—U. S. Eng., 231 W. Main St., Denison, addnl. facilities, to Campbell & Kay, Tyler, approx. **$25,000.**

Tex., Dallas—RUNWAYS—Expansion, exten. runways, Love Field, to Texas Bitulithic Co., 111 Commerce St., **$146,407.** Awarded 11/25. CD 9/9—ENR 9/16.

†Tex., Fort Sam Houston (Sta. San Antonio)—FACILITIES—U. S. Eng., Fort Sam Houston, facilities, Bexar Co., to H. Bumbaugh & Co., 102 Grandview Pl., San Antonio, approx. **$25,000.** CD 11/22—ENR 11/25.

Tex., Leesburg—OIL WELL—Gulf Oil Co., 2 and Santa Fe Sts., Dallas, drilling, developing new 7,500 ft. test oil well to H. L. Hunt, 4408 Lawther Dr., Dallas, approx. **$30,000.**

†Tex., Pyote—AIRFIELD FACILITIES—U. S. Eng., Albuquerque, N. M., imprvs., addnl. construction, incl. recreation bldg., Sol. W29-005-Eng-44-92, at airfield, to N. W. Baley, Albuquerque, N. M., approx. **$65,000.** CD 11/24—ENR 12/2.

†Tex., San Marcos—TAXIWAYS—U. S. Eng., Fort Sam Houston, reconstructing taxiways, to Colglazier & Hoff, Inc., 326 Sequin Rd., San Antonio, approx. **$25,000.**

†Tex., Ysleta—TARGET—U. S. Eng., Albuquerque, N. M., target at Ysleta Ground Gunnery School, Contr. 911-eng-2011, to J. E. Morgan & Sons, El Paso, **$36,711.**

†Va., Blackstone — TENT CAMPS — U. S. Eng., Fort Norfolk, Norfolk, tent camps, Blackstone A.A.F., Contr. 44-110-eng-5, to Grannis, Higgins, Thompson & McDevitt Co., Builders Bldg., Charlotte, N. C., **$105,550.**

†Va., Camp Patrick Henry (br. Newport News)—FACILITIES—U. S. Eng., Fort Norfolk, Norfolk, facilities, Contr. 44-110-eng-2749, to Ross Engineering Co. Inc., 3308 14 St. N.W., Wash., D. C., **$116,178.**

†Va., Norfolk — HANGAR UNIT STEEL — Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N. W., Wash., D. C., structural steel for hangar unit, NAS, NOY 7886, to Bethlehem Steel Co., Mercantile Trust Bldg., Baltimore, Md., **$165,104.**

†Washington—CONSTRUCTION—U. S. Eng., 800 3 Ave., Seattle, Zone 4, addnl. construction, Skagit Co., to Airport Builders, 212 W. Hudson St., Seattle, **$91,429.**

†Washington — MAGAZINE FACILITIES — Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., magazine facilities, NOY 6876, Arlington and Shelton, to Atherton Constr. Co., 1101 Terminal Sales Bldg., Seattle, **$58,471.** CD 6/22.

Alta., Calgary—AIRPORT FACILITIES—Dpt. Transport, Ottawa, Ont., installing watermain and service lines, sanitary sewer at airport, to Corporation of City of Calgary, Calgary, about **$28,600.**

Alta., Currie—AERODROME—Dpt. Transport, Ottawa, Ont., addnl. aerodrome development, R. 1, to Currie barracks, fencing, drainage, runway, repairs, to Doncaster Constr. Co. Ltd., Edmonton, about **$61,000.**

Alta., Shepard—HANGAR, etc.—Dpt. Natl. Defense (Air), Lisgar Bldg., Ottawa, Ont., addnl. accommodation at aerodrome, hangar imprvs., mess hall, etc., to Smith Brothers & Wilson, Ltd., 104 Royal Bank Bldg., Regina, Sask. **$100,000.** CD 9/23—ENR 9/30.

B. C., Tofino—AIRPORT—Dpt. Transport, Ottawa, Ont., addnl. airport development incl. clearing, smoothing, rolling, grading, drainage, constructing hard-surface taxi strips and runways, etc., to Coast Constr. Co. Ltd., 510 W. Hastings St., Vancouver, about **$350,600.**

Ont., Trenton—IMPROVEMENTS—Dpt. National Defense (Air), Ottawa, temporary construction workshop at No. 6 Repair Depot, to Sterling Constr. Co. Ltd., 2494 Sandwich St., Windsor, **$68,000.**

Que., Dorval (Montreal)—AIRPORT BLDG. —Trans-Canada Air Lines, 355 McGill St., Montreal, 1 story, 100x600 ft., wood frame storage shed at airport, concrete fdn., to A. F. Byers Constr. Co., Ltd., 1226 University St., Montreal, about **$196,000.**

LATIN AMERICA

Mexico—State of Jalisco, Palacio del Estado, Guadalajara, plans completing various roads, $1,000,000. Financed by National Urbanization and Public Works Bank.

Mexico, Guadalajara — City, Central Dpt., Guadalajara, state of Jalisco, repairing city roads, drainage work in suburb of **Colonia Reforma,** to Carlos Ugarte, Guadalajara, **$50,000.** Awarded 11/25.

Mexico, Guadalajara—State of Jalisco, Dpt. P. Wks., Guadalajara, constructing road between Guadalajara and Barra de Navidad, to Miguel Ochoa, Guadalajara. Est. **$700,000.** Awarded 11/25.

Mexico, Mexico City—National Defense Ministry, Government Palace, takes bids probably in January, constructing military hospital, in Chapultepec Park. $1,000,000.

Mexico, Mexico City—Nueva Empresa de El Toreo, S. A., Ave. del Ejido, 14, Mexico, D. F., plans bull fight arena and cabaret. $3,250,000. Francisco Centeno, c/o owner, archt.

Mexico, Mexico City—Eugene Houdry & Associates, Federal Bldg., plans constructing, equipping hi-octane gasoline manufacturing plant to produce Houdry Process products.

Mexico, Monterrey—State of Nuevo Leon, Monterrey, plans new schools, repairing schools, here and vicinity. $400,000.

Mexico, Tampico — National Stockmen's Bank, et al., Tampico, plans constructing, equipping packing plant. $500,000.

PUBLIC BUILDINGS

PROPOSED WORK

Ala., Holt—Tuscaloosa Co. Bd. Educ., Tuscaloosa, plans by D. B. Schuyler, Tuscaloosa, brick, concrete block high school. $250,000

†Ariz., Yuma—Pub. Housing Auth., NHA, 785 Market St., San Francisco, Calif., 80 family dwelling units, Ariz. 2337; 50 family dwelling units, Ariz. 2338; 20 stop-gap units, Ariz. 2339.

†Calif., Alameda—Home Owners' Loan Corp., 1440 Bway., Oakland, Zone 12, plans by Reynolds & Chamberlain, 564 Market St., San Francisco, converting bldg. at 1443 Stanton St., providing living units for in-migrant war workers, Case No. W4D-157. Over $5,000.

†Calif., Berkeley—Home Owner's Loan Corp., 1440 Bway., Oakland, Zone 12, plans by I. M. Johnson, 449 MacArthur Blvd., Oakland, converting residence at 2022 Dwight Way into living units for in-migrant war workers, Case No. W4B-792. Over $5,000.

†Calif., Berkeley—Hom[e] Owners' Corp., 1440 Bway., Oakla[nd], Zone 12, Reynolds & Chamberlain, [564] Market St., San Francisco, converting bld[g.] at 1630 [Vi]ew St. providing living units [for in-migrant] workers, Case No. W4B-11[72]. Over $5,000.

†Calif., Berkeley—Hom[e] Owners' Corp., 1440 Bway., Oakla[nd], Zone 12, by R. W. Jeans, 1824 San [Pa]blo Ave., conv[er]ing bldg. at 3254 Adeline [St.], providing units for in-migrant war [wo]rkers, Case W4B-1082. Over $5,000.

†Calif., Hayward—Hom[e] Owners' Corp., 1440 Bway., Oakland, Zone 12, plans Thos. M. Edwards, 704 Market St., San Francisco, converting residence at 2 and [W] Sts., into 10 living units, for in-migrant workers, Case No. W4B-642. $20,000.

†Calif., Oakland—Home Owners' Corp., 1440 Bway., Zone 12, plans by I. Johnson, 449 MacArthur Blvd., Conv[er]ing bldg. at 1224 30 Ave. providing living units in-migrant war workers, Case No. W4B-[1]. Over $5,000.

†Calif., Oakland—Home Owners' Corp., 1440 Bway., Zone 12, plans by I. Johnson, 4716 Reinhardt Dr., converting dence at 310 Park View Terrace, prov[i]ding living units for in-migrant war workers, No. W4B-1236. Over $5,000.

†Calif., Oakland—Home Owners' Corp., 1440 Bway., Zone 12, plans by Eaarerly, 2419 McGee Ave., Berkeley, conv[er]ing residence at 3614 E. 12 St., providing units for in-migrant war workers, No. W4B-1290. Over $5,000.

†Calif., Oakland—Home Owners' Corp., 1440 Bway., Zone 12, plans by Hy[de] Appleton & Associates, 68 Post St., San Francisco, converting bldg. at 1798 Atlantic, providing living units for in-migrant workers, Case No. W4B-1268. Over $5,000.

†Calif., Oakland—Home Owners' Loan C[orp.] 1440 Bway., Zone 12, plans by Reynolds Chamberlain, 564 Market St., San Francisco converting bldg. at 1737 12 St., into living units for in-migrant war workers, Case W4B-1173. Over $5,000.

†Calif., Oakland—Home Owners' Loan C[orp.] 1440 Bway., Zone 12, plans by Reynolds Chamberlain, 564 Market St., San Francisco converting bldg. E. 27 St. and 26 St. into living units for in-migrant war workers, Case No. 1192. Over $15,000.

†Calif., Oakland—Home Owners' Loan C[orp.] 1440 Bway., Zone 12, plans by M. J. Mar[tin] 675 37 St., converting residence at 1411 Orbell St., providing 4 living units for in-migrant war workers, Case No. W4B-[1258]. $8,000.

†Calif., Oakland—Home Owners' Loan C[orp.] 1440 Bway., Zone 12, plans by M. J. Mar[tin] 675 37 St., converting residence at 1405 Orbell St., providing 6 living units for in-migrant war workers, Case No. W4B-1242. $12,000.

†Calif., Oakland—Home Owners' Loan C[orp.] 1440 Bway., Zone 12, plans by M. J. Mar[tin] 675 37 St., Oakland, converting residence 569 Oakland Ave., providing 4 living units for in-migrant war workers, Case No. W4B-1258. $8,000.

†Calif., Oakland—Home Owners' Loan C[orp.] 1440 Bway., Zone 12, plans by T. M. Efird, 704 Market St., San Francisco, converting residence at 1440 12 Ave. providing living units for in-migrant war workers, Case No. W4B-1234. Over $5,000.

Calif., San Diego—Bd. Educ., City H[all] plans by Kistner, Curtis & Wright, Architects Bldg., Los Angeles, and Spreckles Bldg., San Diego, group frame school bldgs. at Kearny Junior-Senior High School, Linda Vista, $[illegible] 000.

†Calif., Stockton—Home Owners' Loan Corp., 1440 Bway., Oakland, Zone 12, plans by V. Buckley, 155 Sansome St., San Francisco, converting bldg. at 325 S. San Joaquin, providing living units for in-migrant war workers, Case No. W4G-172. Over $5,000.

†Conn., West Hartford—Pub. Housing Auth., NHA, 24 School St., Boston, Mass., public stubs, Conn. 6026. $5,000.

†District of Columbia—Pub. Housing Auth., NHA, 19 and Capitol Sts. N.E., Wash., by E. H. Klaber & A. P. Davis, 1220 Connecticut Ave. N.W., Wash., 220 family dwelling units, DC. 1-14. CD 10/27—ENR 12/2.

★**†Ga., Chatham Field (br. Savannah)** — U. S. Eng., Post Office Bldg., Savannah, officers' quarters, mess, enlisted men's barracks, post exchange, chapel, theater and other miscellaneous bldgs., chemical yard, concrete floor, special bombardment training facilities, etc. $500,000.

†Ga., Columbus—Pub. Housing Auth., W[illiam] Georgia Savings Bank Bldg., Peachtree & Broad Sts., Atlanta. 160 permanent family dwelling units, Ga. 4-5.

†Illinios—Key Co., East St. Louis, addnl. plant facilities, St. Clair Co. $430,000. Defense Plant Corp. will finance.

★**†Iowa**—Grain Processing Corp., Muscatine, addnl. plant facilities, Muscatine Co., approx. $2,325,000. Defense Plant Corp. finance.

BLIC BLDGS. (Proposed Work, Cont'd.)

†La., New Orleans—Pub. Housing Auth., NHA, 1205 Electric Bldg., 7 and Taylor Fort Worth, Tex., revised plans, 500 unit permanent housing, La. 1-4, Florida $2,500,000. CD 2/17—ENR 2/25.

Maryland—U. S. Eng., 1 and Douglas Sts. Wash., D. C., addnl. bldgs., utilities, derick Co.

Mass., Springfield—Dpt. P. Wks., City Hall, ches completed by D. H. Pickering, 122 erway, Brookline, altering auditorium. 0,000.

Michigan—Ford Motor Co., 3674 Schaefer Dearborn, addnl. plant facilities, Dickin- Co. $125,000. Defense Plant Corp. will nce.

Neb., Omaha — University of Nebraska ool of Medicine, 42 and Dewey Sts., 175 nurses home. Over $150,000. Applied to A.

N. M., Belen—Pub. Housing Auth., NHA, ctric Bldg., 7 and Taylor Sts., Fort Worth, postponed bids to have been opened 8, 50 unit dormitory housing, NM 29170, 60 unit family housing, NM 29171. Plans osit $50. W. C. Kruger, Santa Fe, archt. 11/23—ENR 11/18.

N. M., Las Vegas—Pub. Housing Auth., A, 1205 Electric Bldg., 7 and Taylor Sts., t Worth, Tex., postponed bids to have opened Dec. 8, 60 unit family housing, 29172. Plans deposit $50. W. C. Kruger, ta Fe, archt. CD 11/23—ENR 11/4.

Nev., Pioche—Pub. Housing Auth., NHA, Market St., San Francisco, Calif., 80 unit ily dwellings, Nev. 26162.

Okla., Tulsa—U. S. Eng., 416 Wright Bldg., a, Zone 2, addnl. facilities at B Modifica- Center 16, and at Tulsa Aircraft Assembly nt C, Sol. 34-066-44-28.

Oregon—Northwestern Ice & Cold Storage 72 S.E. Washington St., Portland, addnl. t facilities, Multnomah Co. $150,000. De- e Plant Corp. will finance.

Tex., Alpine—Sul Ross, State Teachers Col- Alpine, plans by V. J. Smith, Alpine, 1 y, masonry warehouse.

Tex., Houston—H. A. Patersen, vice pres. Educ., plans by A. C. Finn, Bankers tgage Bldg., school facilities. $386,714. ied for FWA funds.

Tex., Pyote—Pub. Housing Auth., NHA, Electric Bldg., Seventh and Taylor Sts., Worth, plans by Christensen & Christen- Thomas Bldg., Dallas, 50 family trailer , Tex. 41-632.

Tex., Temple—U. S. Eng., Fort Sam Hous- recreation bldg., facilities, utilities, etc., McCloskey General Hospital.

Utah, Lark—Pub. Housing Auth., NHA, Grand Ave., Kansas City, Mo., 34 unit ily dwellings, Utah, 42179.

Wash., Pasco—Pub. Housing Auth., NHA, Market St., San Francisco, Calif., 150 stopgap family dwellings, Wash. 45250.

berta—Dominion Govt., c/o Ministry of or, Ottawa, Ont., plans by Dpt. P. Wks., wa, Ont., school and day nurseries.

C., New Westminster—Provincial Govern- t of British Columbia, Parliament Bldg., oria, bids soon reconstructing central por- 2 wings at New Westminster Mental pital, etc. $250,000-$300,000. H. Whit- r, Parliament Bldgs., Victoria, archt. CD —ENR 1/28.

C., Penticton—Province of British Colum- Ministry of Education, Victoria, plans by P. Wks., Victoria, vocational-technical ol. $150,000.

an., Winnipeg—Municipality, city hydro bldg. and retail store, near corner Ken- St. and Portage Ave. $150,000. Public ies Comn., City Hall, engr.

tario—Dominion Govt., c/o Ministry of r Ottawa, school and day nurseries. P. Wks., Ottawa, archts.

t., Arnprior—Municipality, c/o Councillor Campbell, Arnprior, hospital. $150,000. e submitted to ratepayers, Dec. 6.

t., Newmarket—York County Hospital Newmarket, hospital addn. $150,000. poned until 1944. Margison & Babcock, W. Dundas St., Toronto, engrs. CD —ENR 3/4.

t., Orillia—Province of Ontario, c/o Minis- f Health, Toronto, plans by Dpt. P. Wks., ament Bldgs., Toronto, hospital addn. for ment and training of defective children. 900.

t., Ottawa—Secy. Dpt. P. Wks., Ottawa, ary rehabilitation centre, Billings Bridge, here. $350,000.

t., St. Catherines—Niagara Peninsula orium, Merrittville Hy., Dr. C. G. Shaver. bids soon sanatorium addn., increased ties for nursing, X-ray, kitchen, etc. 00. CD 8/25, under Commercial Bldgs.

t., St. Thomas—Municipality, c/o J. Bris- 15 St. Catherine St., plans by Govan- son & Lindsay, 515 Jarvis St., Toronto, rnity and isolation units at Memorial ital, Pearl St. $150,000.

★Ont., Toronto—Secy. Dpt. P. Wks., Ottawa, plans by Allvard & Gouinlock, engrs.-archts., 57 Bloor St., Toronto, soldier's hospital, Sunnybrook Farms, North York. $4,500,000. CD 11/4—ENR 11/11.

Que., Banlieu de Quebec (Postal Dist. Quebec City)—Province of Quebec, c/o Ministry of Attorney General, Quebec City, plans by Dpt. P. Works, Quebec City, reform school for women. $150,000.

Que., Quebec City—Province of Quebec, c/o Ministry of Health, Quebec City, plans by Dpt. P. Wks., Quebec City, central health protection clinic, $200,000.

BIDS ASKED

Bids Asked December 10

†Conn., Bridgeport — Bridgeport Housing Auth., 252 Hallett St., gas and water mains, grading, drainage, etc., Conn., 6052, Success Park War housing, for NHA. Plans deposit $50 for first set and $10 for each addnl. set. H. G. Lindsay, 211 State St., archt. CD 11/30—ENR 12/2.

Bids Asked December 13

†Maryland—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., naval research laboratory annex, Spec. 12681, NOY 7935, Randle Cliffs.

Bids Asked December 14

†Pa., Birdsboro—Pub. Housing Auth., NHA, 270 Bway., New York, 7, N. Y., 160 unit family housing, Pa. 36440. Extended date. Plans deposit $50. Eiler & Mast, 147 N. 5 St., Reading, archts. CD 11/26—ENR 12/2.

Bids Asked December 15

†D. C., Anacostia—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., utility bldg., Naval Research Laboratory, Spec. 12683, NOY 7937. CD 11/4.

Bids Asked December 16

†N. C., Durham—W. M. Rich, supt. Lincoln Hospital, Durham, addnl. facilities, equip. for nurses' training program, NC 31-274(NF). $165,000. FWA. Plans deposit $5. Atwood & Weeks, 504 Snow Bldg., engrs.-archts. CD 11/23—ENR 12/2.

Bids Asked December 17

†Nev., Reno—Housing Auth. of City of Reno, 43 Sierra St., 100 unit family dwellings, Nev. 26156, and 89 unit dormitory housing, Nev. 26157, for NHA. DeLongchamps & O'Brien, 760 Market St., San Francisco, Calif., archts. CD 10/29—ENR 11/4.

Bids Asked December 18

†Calif., Herlong—Pub. Housing Auth., NHA, 785 Market St., San Francisco, 300 family dwelling units, community, child service and store bldgs., Calif. 4794. Extended date. Wm. P. Day & Associates, Financial Center Bldg., San Francisco, archts. CD 12/3.

Bids Asked December 20

Ont., London—Secy. Dpt. P. Wks., Ottawa, exten. active treatment pavilion, Westminster Military Hospital. About $200,000. Plans deposit $50.

Bids Asked December 22

†O., Osborn—Pub. Bldgs. Admin., 18 and F Sts. N.W., Wash., D. C., recreation bldg., Ohio 33-220. FWA. Bids 11/4 rejected. CD 11/9—ENR 11/11 under LB.

Bids Asked December 24

†Mich., Saginaw—Pub. Housing Auth., NHA, 2073 E. 9 St., Cleveland, O., 100 unit temporary family dwellings, Mich. 20224. Extended date. Plans deposit $50. O. Winn, Highland Park, archt. CD 11/29—ENR 12/2.

Bids Asked December 27

†S. D., Custer—Pub. Housing Auth., NHA, 201 N. Wells St., Chicago, Ill., 70 unit housing. Lankton & Ziegele, 1805 N. Knoxville Ave., Peoria, Ill., archts.

Bids Asked

†Calif., Chula Vista—Rohr Aircraft Co., frame, stucco cafeteria bldg. $110,000. Defense Plant Corp. will finance. Kistner, Curtis & Wright, Architects Bldg., Los Angeles, and Spreckles Bldg., San Diego, archts. CD 9/24—ENR 9/30.

LOW BIDDERS

†Ala., Mobile—Pub. Housing Auth., NHA, Georgia Savings Bank Bldg., Peachtree and Broad Sts., Atlanta, Ga., Nov. 26, converting existing dormitory bldg. into 409 suite apartments, Ala. 1218, 1220, 1221, 1222, 1223 and 1224, from Algernon Blair Co., First National Bank Bldg., Montgomery, $411,000. CD 11/17.

†Ala., Tuscumbia—Pub. Housing Auth., NHA, Georgia Saving Bank Bldg., Peachtree and Broad Sts., Atlanta, Ga., Nov. 23, fourteen 100 unit row houses and community bldg., Ala. 1219, from Harding & Ramsey Co., 161 Spring St., N.W., Atlanta, Ga., $238,561. CD 11/9.

†Colo., Lowry Field (P. O. Denver)—U. S. Eng., 909 17 St., Denver, 1 story, 35x205 ft., brick, concrete bldg., from E. B. Jones, Jr., 1010 So. Josephine St., Denver, $45,800.

★†D. C., Wash.—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., WAVES barracks, West Potomac Park, Spec 12786, NOY 8663, from Ross Engineering Co., 3308 14 Ave. N.W., Items (1) $848,125 (2) deduct $1,225. CD 11/12—ENR 11/18.

★†La., New Orleans—Pub. Housing Auth., NHA, 1205 Electric Bldg., 7 and Taylor Sts., Fort Worth, Tex., Nov. 30, 300 unit housing, playground and community bldg., Piety St., Old Gentilly Rd. and Industrial Canal, La. 16099, from R. P. Farnsworth & Co., Inc., 1515 S. Salcedo St., $863,132. CD 10/29—ENR 11/4.

★†Md., Patuxent River (br. Wash., D. C.)—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., D-c. 1, quarters for married enlisted men, NOY 7781, at Naval Air Station, from Harwood-Neb Constr. Co., Inc., 1520 K St. N.W., Wash., D. C., $1,836,000. CD 11/19.

★†Md., Patuxent River (br. Wash., D. C.)—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., barracks, Naval Air Station, Spec. 12656, NOY 7907, from Irons & Reynolds, Inc., Barr Bldg., Wash., D. C., Items (1), $530,062, (2) $861,564, (3) $618,692. CD 11/4—ENR 11/11.

†Pa., Chambersburg—Pub. Housing Auth., NHA, 270 Bway., New York, 7, N. Y., Nov. 30, 172 unit temporary dwelling housing, community bldg., Pa. 36436, from Agostini Bros. Bldg. Corp., 55 W. 42 St., New York, N. Y., $464,636. CD 11/12—ENR 11/18.

★†Pa., Middletown—Pub. Housing Auth., NHA, 270 Bway., New York, 7, N. Y., Nov. 29, 420 unit housing, Pa. 36439, from Haris Constr. Co., 26 Court St., Brooklyn, N. Y., $1,154,580. CD 11/19—ENR 11/25.

★†Tex., Galveston—Pub. Housing Auth., NHA, 1205 Electric Bldg., Seventh and Taylor Sts., Fort Worth, 500 family dwelling units, Tex. 41-623 and 100 family dwelling units, Tex. 41-615, from Robt. E. McKee, 1918 Texas Ave, El Paso, $1,225,000. Correction—Former contract not awarded). CD 11/26—ENR 12/2, under CA.

†Tex., Galveston—U. S. Eng., 25 St. and Avenue F, Dec. 2, pattern warehouse, at foot of Point Boat Yard, Sol. 41-243-44-C81, from Esslinger-Misch Co., Texas City, $100,559. CD 11/24.

†Vt., Springfield—Pub. Housing Auth., NHA, 24 School St., Boston, Mass., Nov. 29, grading for housing, Vt. 43011 and Vt. 43014, from K. F. Jackson, 214 High St., Boston, Mass., $15,245. CD 11/19—ENR 11/25.

★†Va., Williamsburg—Pub. Housing Auth., NHA, Temporary Bldg. 2, 19 and D Sts. N.W., Wash., D. C., Nov. 30, 144 unit family dwellings, Va. 44279, 350 unit family dwellings, Va. 44285 and 108 unit dormitory housing, Va. 44305, from Anthony P. Miller, Inc., 3333 Arctic Ave., Atlantic City, N. J., $1,499,000. CD 11/22—ENR 11/25 under Lee Hall.

†Wash., Seattle—Seattle Housing Auth., 825 Yesler Way, Zone 4, Nov. 30, 200 unit addnl. housing, Duwamish Bend, for NHA, from Bergesen, Wick & Dahlgren, P. O. Box 83, Route 1, Tacoma, $414,561. CD 11/22—ENR 10/28.

★†Wis., Kenosha—Pub. Housing Auth., NHA, 201 N. Wells St., Chicago, Ill., Nov. 23, 260 unit housing, Wis. 47072, from Zisken Constr. Co., 4424 W. Roosevelt Rd., Chicago, Ill., $745,000. CD 11/3—ENR 11/11.

CONTRACTS AWARDED

†Calif., Oakland—U. S. Eng., 74 New Montgomery St., San Francisco, housing, Job No. 1242, Alameda Co., to A. J. Hopper, 243 Langton St., San Francisco, $39,872. Awarded 11/30.

†Calif., San Bernardino—Housing Auth. of San Bernardino Co., 123 Cluster St., 100 temporory family dwelling units, Calif. 4796, for NHA, to E. S. McKittrick Co., 7839 Santa Fe Ave., Huntington Park, $198,869. Awarded 11/27. CD 11/19.

†Connecticut—U. S. Eng., 819 Industrial Trust Bldg., Providence, R. I., maintenance shop, No. 44/65, Hartford Co., to J. G. Roy & Sons Co., 21 Silver St., Springfield, Mass. Est. under $50,000. Bids 11/27.

†Del., Lewes—U. S. Eng., 6 and Walnut Sts., Phila., Pa., temporary frame bldgs. at Ft. Miles, Contr. 36-109-Eng-190, to White Constr. Co., 95 Madison Ave., New York, N. Y., $385,800.

†Illinois—Abbott Laboratories, Sheridan St., North Chicago, penicillin plant, to W. E. O'Neil, 2751 Clybourn St., Chicago. Est. about $120,000. Federally financed. CD 9/23—ENR 9/30.

†Kansas—U. S. Eng., 10 E. 17 St., Kansas City, Mo., temporary frame bldgs., walks, etc., Contr. 23-028-Eng-203, Sunflower Ordnance Works, Johnson Co., to Peter Kiewit Sons Co., 1024 Omaha Natl. Bank Bldg., Omaha, Neb., $368,479.

†Me., Presque Isle—U. S. Eng., 31 St. James Ave., Boston, Mass., ordnance facilities and machine shop, No. 19-023-44-NEG 131, to T. W. Cunningham, Inc., 15 State St., Bangor. Est. $150,000. Bids 12/2.

PUBLIC BLDGS. (Contracts Awarded, Cont'd.)

†**New Jersey**—U. S. Eng., 120 Wall St., New York, 5, N. Y., warehouse bldg. (at military encampment) Quartermaster Depot, Somerset Co., to Arthur Venneri Co., 259 N. Broad St., Elizabeth, **$56,202.** Bids 11/22.

†**N. J., Hoboken**—Bethlehem Steel Corp., foot of 14 St., Hoboken, 1 story, brick blacksmith copper and pipe shop addn., to Bertoldi-Kelter Co., Inc., 55 W. 43 St., New York, N. Y., **$40,000.** Federally financed. Bids 11/6. CD 11/1.

†**N. J., Metuchen**—U. S. Eng., 120 Wall St., New York 5, N. Y., 1 story, 104x512 ft., frame packing and shipping shed, to Jos. Muscarelle Co., 115 Midland Ave., Garfield, **$72,535.**

†**N. C., Camp Sutton (br. Monroe)**—U. S. Eng., 33 Customhouse, Charleston, S. C., temporary frame bldgs. etc.; Contr. 33-081-Eng-71, to Barger Bros., Mooresville, **$151,058.**

†**O., Dayton**—U. S. Eng., Wright Field, Dayton, addnl. bldgs., Dayton Signal Corps Depot, to Ferro Concrete Constr. Co., 203 W. 3 St., Cincinnati, **$494,167.**

†**Pa., Turtle Creek**—Allegheny Co. Housing Auth., 201 County Bldg., Pittsburgh, community bldg., Electric Heights housing, Pa. 36121, for NHA, to Navarro Corp., 6219 Broad St., Pittsburgh. Est. **$200,000.** Bids 11/1. CD 10/28—ENR 7/8.

★†**Va., Portsmouth**—Federal Works Agency, 18 and F Sts. N.W., Wash., D. C., hospital and nurses home, Va. 44-272, to J. O. Burgwin & Co., 429 Penn Ave., Pittsburgh, Pa., **$846,900.** Bids 11/9, awarded 11/27. CD 11/10—ENR 11/18 under LB.

Alta., Shepard—Dominion Government, c/o Ministry of Munitions & Supply, Ottawa, Ont., addnl. construction at No. 1 Wireless School, to Smith Bros. & Wilson, Ltd., 104 Dominion Bank Bldg., Regina, Sask. Est. **$150,000.** Dpt. National Defense for Air, Lisgar Bldg., Ottawa, Ont., archts.

COMMERCIAL BUILDINGS

PROPOSED WORK

★**Calif., Los Angeles**—O. M. Condon & Associates, 3274 Romulus Dr., plans by H. Gibbs, 441 E. 1 St., Long Beach, 213 frame, stucco dwellings, oil heating. $750,000.

★**Calif., Los Angeles**—Rancho Vega Housing Corp., 211 S. La Brea Ave., plans by P. R. Williams, 1271 W. 25 St., twenty-four 2 story, 144 unit frame, stucco housing in San Fernando Valley. $600,000.

Calif., San Bernardino—F. L. Whitelock, California Hotel Bldg., plans by C. N. Aldrich, 1834 Dawson Ave., Long Beach, 94 frame, stucco dwellings. Over $150,000.

Colo., Aurora—Owner, c/o W. H. Simon, archt., 2088 Dahlia St., Denver, thirteen 4 family and three 2 family brick bldgs., $250,000.

Colo., Denver—Owner, c/o R. H. Ervin, archt., 1000 Patterson Bldg., four 1 story and four 2 story brick bldgs., containing 44 living units. $200,000.

Colo., Denver—Owner, c/o R. H. Ervin, archt., 1000 Patterson Bldg., thirty 1 story brick houses, $150,000 or more.

Conn., New London—Lawrence & Memorial Hospital, Montauk, New London, plans by F. S. Langdon, 240 State St., 2 story, part bsmnt., 46x206 ft. and ell 46x96 ft. nurses housing and training school, $250,436. CD 823—ENR 8/26.

★**Kan., Kansas City**—Fairfax Hills, Inc., 220 Security Bldg., five 1 story, 4 unit, eleven 1 story, 6 unit, thirty-three 2 story, 8 unit apartment bldgs., north of Brown Ave. between 10 and 12 St. Approx. $2,000,000.

Miss., Biloxi—Coral Gardens Homes, Inc., c/o Chas. B. Tayloe, Buena Vista Hotel, 32 dwellings. $155,000.

Mont., Great Falls—Highland View, Inc., R. F. English, pres., 60 dwellings. $350,000.

N. J., Elizabeth—St. Elizabeth's Hospital, 204 S. Broad St., plans by G. Poggi, 287 Morris Ave., approx. 100 room nurse's home.

N. J., Pennsville—Brun Brook Builders, 1776 Bway., New York, N. Y., fifty-two 1 story, brick, frame residences. $312,000.

O., Cleveland—Alva & C. L. Bradley, 1276 W. 3 St., sketches by P. W. Ockert & G. Teare, 1836 Euclid Ave., converting 8 story loft bldg. into 56 suite apartment bldg. $150,000.

★**O., Cleveland**—Young Men's Christian Assn., R. Franklin, secy., E. 22 St. and Prospect Ave., gymnasium, swimming pool, 7615 Cedar Ave., and boys bldg., E. 22 St., Prospect Ave., $500,000.

O., Dayton—Dayton Y. W. C. A. 3 and Wilkinson Sts., plans by R. L. Rosser, 29 E. First St., 3 story, brick, concrete, 60x200 ft., brick, concrete bldg., $240,000.

O., Painesville—Painesville Homes, Inc., c/o Ed. Klein, Society for Savings Bldg., Cleveland, seventy-nine 1½ story, bsmnt., 25x29 ft., brick 1-family houses, Chestnut St. and Overlook Blvd. $6,000 ea.

Tex., Brownsville — Gibraltar Bldg. Corp., Construction Bldg., Dallas, plans by H. S. Avery, 2717 Kendale Dr., Dallas, 6 room, brick, concrete dwellings, facilities, utilities, etc. $150,000.

Tex., Dallas—Shadywood Development Co., Cedar Hill Rd., West Oak Cliff, Dallas, one hundred ten 4 room frame type dwellings, facilities, outside utilities, etc. $200,000.

★**Tex., Dallas**—A. P. Simons, 707 Liberty St., two hundred 1 story, brick veneer type dwellings, $1,000,000.

Tex., Fort Worth — Linwood Development Co., 2700 Merrimac St., plans by E. T. Glasgow, Insurance Bldg., forty 1 story duplexes, utilities, etc., concrete fdns. $225,000.

Tex., Gainesville—W. E. Woods, Gainesville, 50 frame 5 room dwellings. $250,000. FHA.

★**Tex., Goose Creek**—Tejas Development Co., Petroleum Bldg., Houston, 150 frame dwellings, incl. water, gas, sewer lines, facilities, street paving, etc., Jno. Gaillard Estate Zone. $750,000.

★**Wash., Seattle**—Neise Mortensen & Co., 1021 Westlake Ave. N., Zone 9, 522 houses, Skyway Park, near here, $2,500,000.

★**Wash., Spokane**—J. L. Siegmund Co., Hyde Bldg., plans by N. Thompson, Paulsen Bldg., 150 houses between 34 and 38 Sts. on Division St. and west to Bernard St. $750,000.

Wyo., Cheyenne—Clinton Realty Co. of Wyoming, c/o C. Francis Pillsbury, archt., 421 Midland Savings Bldg., Denver, 19 Brick bldgs., containing 76 living units.

N. B., Moncton—Brunswick Hotel, Ltd., c/o A. Wheeler, pres., Moncton, hotel addn. $150,000.

Ont., Lindsay—Governors Ross Memorial Hospital, Lindsay, Memorial Hospital addn. $200,000.

Ont., Mimico—R. A. Skinner, 15 George St., bungalow building program, various locations. $150,000.

★**Ont., Toronto**—Salvation Army, 20 Albert St., Col. G. W. Peacock, secy., plans by Govan, Ferguson & Lindsay, 575 Jarvis St., 5 story, bsmnt., 45x200 ft. and 45x70 ft., brick, stone rein.-con. or steel general hospital and nurses' home, Davisville Ave., east of Yonge St. $570,000.

Que., Lauzon—Roman Catholic Parish of Ste. Bernadette Soubirous, Lauzon, church and presbytery. $150,000.

Que., Maria — Governing Bd. of Hospital Bourg, c/o Dr. G. Lachance, New Richmond Centre, hospital.

Que., Montreal—Canada Colonial Constr. Co., Ltd., 757 Place d Armes, dwellings. $150,000.

Que., Montreal—Canadian Homes, Ltd., 1178 Phillips Pl., 2 story, brick dwellings, concrete fdns. Total est. $150,000.

Que., Montreal—Royal Securities Corp. Ltd., 244 W. St. James St., reconstructing commercial bldgs. E. Notre Dame St. $150,000.

BIDS ASKED

N. Y., Mount Kisco—Northern Westchester Hospital, E. Main St., soon lets contract hospital addns., alterations. R. B. O'Connor, 101 Park Ave., New York, archt.

LOW BIDDERS

Ore., Portland—J. Zell, 639 S.W. Bway., Nov. 29, conversion of Multnomah block, W. Burnside and 19 Ave., into apartment house, from D. J. Malarkey, 923 S.W. 17 St., **$330,209.** Dougan & Helms, 409 Couch Bldg., archts. CD 11/19—ENR 11/25.

CONTRACTS AWARDED

★**Calif., Long Beach**—Home Investment Co., 410 Times Bldg., 218 frame, stucco dwellings, near Wardlow Rd. Owner builds. **$763,000.** R. J. Kieffer, 2212 Griffith Ave., Los Angeles, archt. CD 9/21—ENR 9/23.

★**Calif., Los Angeles**—Allied Contractors, Inc., 9700 W. Pico Blvd., 250 frame, stucco dwellings, Avalon and Century Blvds. Owner builds. **$1,500,000.** G. Adams, 113 E. Los Feliz Blvd., Glendale, archt. Seaboard Engineering Co., 8825. W. Olympic Blvd., Beverly Hills, engrs.

Calif., Los Angeles and Burbank—Phoenix Constr. Co., 211 S. Poinsettia Pl., Los Angeles, 20 two story, 4 unit, frame, stucco flat bldgs. Owner builds. **$280,000.**

Calif., Seal Beach—Philip Norton, Inc., 701 W. Ocean Ave., 58 frame, stucco dwellings. Owner builds. Over **$150,000.** CD 8/13—ENR 8/19.

★**Calif., Wilmington**—E. Sandison, 350 W. Avalon Blvd., 104 frame, stucco apartment bldgs., to Aetna Const. Co., 631 Witmer St., Los Angeles, over **$500,000.**

Conn., Manchester—Manchester Development Co., c/o J. E. Kane, archt., 49 Pearl St., Hartford, 80 frame residential development. Lenox, Branford, Durkin and Brookfield Sts. Owner builds. **$370,000.**

★**Md., Middle River**—Oak Grove Apartment Co., 3945 Greenmount Ave., Baltimore, twenty 2 and 3 story, brick apartment bldgs., containing 126 units, to Thos. Mullan & Sons, 3945 Greenmount Ave., Baltimore. Est. **$1,547,000.** Allan B. Mills, c/o owner, archt.

Ore., Portland—R. A. Nagel, 5612 S.W., Menefee Dr., general contract, 76 unit apartment court, day labor; plumbing, to J. B. Lewis, 2743 S.E., Market; heating, to Muirhead & Murhard, 338 S.W., 9 St. Est. **$400,000.** R. Hemenway, Bedell Bldg., archt.

Tex., Harlingen — Jackson & Davis Co., Greenville Ave. at University Blvd., Dallas, one hundred 1 story dwel... Lower Ri... **$450,000.** CD 11/17—ENR 11/25.

Utah, Salt Lake City—A... American Land ... 825 Continental Bank Bldg., 88 frame d... ings, to Nordin Constr. Co., 3030 Expos... Blvd., Los Angeles, Calif. ... 825 Conti... tal Bank Bldg., approx. $4... 000.

Ont., Kingston—Woolwo... Co. Ltd., Bay St., Toronto, store ... construction. Principal Investments L... 465 Bay ... Toronto. Est. **$150,000.**

INDUSTRIAL BUILDINGS

PROPOSED WORK

Calif., Cutler—WINERY—Calgro Wi... near Cutler, rebuilding high winery, destr... by fire. Over $40,000.

Calif., Hollister — PLANT — Robnett ... Co., Hollister, milling plant. $150,000.

Calif., Los Angeles — FACTORY—B... Goodrich Co., 5400 E. Olympic Blvd., ... by A. C. Martin, Higgins Bldg., tire and ... ber products factory expansion, constru... carbon black plant. Over $40,000.

Conn., West Haven—FACTORY—Arma... Rubber Co., M. Snyder, 475 Elm St., ... takes bids superstructure 3 story, 11x200 ... rein.-con. factory. Over $40,000. Excava... contract, to E. & F. Constr. Co., 94 Wel... Bridgeport. Fletcher Thompson, Inc., ... State St., Bridgeport, engr.

D. C., Wash.—STOREHOUSE, etc.—B... more & Ohio R.R. System, A. C. Clark, ... engr., Baltimore & Ohio Bldg., Baltimore, ... soon lets contract storehouse, locker ... etc.

Mass., Gloucester—STORAGE and FRE... ING PLANTS—Cape Ann Fisheries, Inc., ... Square, Gloucester, brick storage and fr... ing plants. $50,000.

Mass., Ludlow—FACTORY—Ludlow ... Co., Ludlow, soon lets contract brick fac... addn. to Mill 8, general imprvs. $4... McClintock & Craig, Inc., 458 Bridge ... Springfield, archts. CD12/3.

Mass., Springfield—FACTORY—Fisk T... Rubber Co. Div. U. S. Rubber Co., 154 ... St., Chicopee Falls, brick, steel factory. ... $40,000.

Minn., Fosston—PLANT—North Amer... Creameries, Inc., 525 Rand Tower, Minne... lis, plans by M. O. Beutow, 1931 Univer... Ave., St. Paul, milk spray drying pl... $75,000.

Minn., Minneapolis — PLANT — Toro M... Corp. of Minnesota, J. S. Clapper, pres., ... Snelling Ave., addnl. mfg. plant facil... $150,000.

N. J., Passaic—PLANT—Lamfert Te... Co., 184 Gregory Ave., 1 story, brick ... mfg. plant $45,000 or more.

N. J., Paulsboro—SHOP—Socony Va... Oil Co., Paulsboro, 1 story, 65x163 ft., st... tural steel, glass brick shop bldg. for ne... finery plant bldg. $80,000.

New York—PLANT—Revere Copper & B... Co., Inc., 230 Park Ave., New York, plan... Wm. Ehmann, 104 S. Michigan Ave., Chi... Ill., plant.

N. Y., Brooklyn—INDUSTRIAL—L. B... sky, 25 Willoughby St., plans by M. Klei... Court St., 1 story, 95x587 ft. industrial ... Morgan Ave. and Ten Eyck St. $200,0...

N. Y., Steamburg—PLANT—Steamburg ... & Cream Co., milk products plant alter... extens., imprvs. $60,000-$70,000.

N. C., Raleigh—WAREHOUSE—G. J. ... supt. Railway Express Co., 89 Lucki... soon lets contract warehouse for Sea... Air Line R. R., 22 Marietta St. Bldg., Atl... Ga. $50,000.

★**Okla, Miami**—PLANT—B. F. Goo... Co., 500 S. Main St., Akron, O., tire ... $5,000,000.

Pa., California—PLANT—Jones & Las... Steel Corp., 3 and Ross Sts., Pittsburgh ... picking and crushing plant at Vesta M... along left bank Monongahela River. ... $40,000.

Pa., Pittsburgh—STORAGE, etc.—F... Kress Box Co., J. B. McClure, pres., N... AV RR, soon lets contract 1 story, 75x20... structural steel storage and loading ... CD 10/22—ENR 10/28.

Pa., Waynesboro—LABORATORY—M... Machine Co., did not award contract lab... tory bldg. Project indefinitely aband... (**Correction**—status). CD 11/10—ENR ... under CA.

R. I., Providence—MAINTENANCE ... REPAIR—P. B. Mutrie Motor Transport ... Inc., 40 Tockwotten St., soon lets contr... story, 65x100 ft., brick, steel, concrete ... tenance and repair bldg. $40,000. ... Manaselian, 8 Waldorf Rd., Newton, ... archt. CD 11/22—ENR 11/25.

Texas—PLANT—Texas Washer Co., ... Patterson St., reconstructing annex ... container mfg. unit.

Tex., Alamo—**GARAGE, etc.**—Shippers ... Cooling Service, Maltby Bldg., Brown ... garage, mechanical shop bldg. $40,000.

INDUSTRIAL (Proposed Work Cont'd.)

Alamo—PACKING PLANT—Stinson & 1921 Austin St., McAllen, vegetable and packing plant, $40,000.

Center — COLD LOCKER PLANT — Co. Cooperative Locker Plant, Center, old locker plant. $40,000.

Edinburg—PLANT—Central Power & Co., Edinburg, frozen food locker plant.

Edinburg — PACKING PLANT — B. ersley, Cardova Apts., Mercedes, citrus vegetable packing plant remodeling and unit. $40,000.

Houston—FACTORY—Cook Paint & ish Co., 1812 Main St., factory unit. $40,-

McAllen—PACKING PLANT—Brogdex citrus and vegetable packing plant addn.

McAllen—PACKING PLANT—Missouri e Ry. Co., F. E. Bates, ch. engr., Mis-Pacific Bldg., St. Louis, 3, Mo., citrus vegetable packing plant remodeling, etc. $40,000.

Mineola—COLD STORAGE LOCKER EM—Wood Co. Rural Electrification Co-tive, Quitman, cold storage locker sys., $40,000.

Mission—PLANT—Mission Food Prod-Co., Mission, vegetable, citrus and meat sing plant, $40,000.

Pharr—FREEZER LOCKER PLANT—Britten & H. Smartt, Pharr, freezer plant. $40,000.

San Benito—PLANT—Alexander Mar-Co., 357 N. Rowson St., 1 and 1½ story, and vegetable packing plant, rein.-con., $40,000.

San Juan—PACKING PLANT—Mis-Pacific Lines, F. E. Bates, ch. engr., ri Pacific Bldg., St. Louis, Mo., vege-and citrus packing plant addn., remodel-Approx. $40,000.

Trinidad—PLANT—Lone Star Produc-n, 1915 Wood St., Dallas, expansion e plant from 80,000,000 cu. ft. to 000 cu. ft. daily capacity for mfg. ents used in aviation fuel and syn-rubber. $125,000.

Winnsboro—COLD STORAGE LOCK-YSTEM—Wood Co. Rural Electrification rative, Quitman, cold storage locker quip. $40,000.

Heber—DAIRY—L. D. S. Church Wel-om., Hailstone, plans by Fetzer & Fetzer mpleton Bldg., Salt Lake City, several at Hailstone, near here, for Northeast-ah Regional Dairy bldg. program.

Green Bay—PLANT—Wisconsin Con-Pipe & Culvert Co., Sheboygan, pipe lant.

Manitowoc—WAREHOUSE—Lakeside g Co., 508 Jay St., plans by P. Brandt ey Bldg., 1 story, 135x150 ft. warehouse. /4—ENR 11/11.

Calgary—REFINERY—Rio Bravo Oil , Canada Life Bldg., refinery. $50,000.

Grassy Lake—MINE—Continental Coal Ltd., Grassy Lake, mine bldgs. $40,000.

Dawson Creek—DAIRY, etc.—Co-ve Society, Inc., Dawson Creek, dairy ry products plant, creamery and cheese $40,000.

Penticton—CANNERY—Mor-Pak Pre-Corp., 351 California St., San Fran-Calif., U. S. A., cannery.

Vancouver—PLANT—Anderson Bay g Co. Ltd., 675 W. Hastings St., saw ingle mill logging plant.

Vancouver—PLANT—Dom. Printing Colour Co. Ltd., 128 Pears Ave., To-Ont., printing and other inks, colors nter's supplies mfg plant. $40,000.

Vancouver—MILL—Neville Lumber d., 612 Vancouver Bldg., saw mill, mill and associated mills.

Victoria—PLANT—Celtic Machinery 10 Toronto Bank Bldg., tools, imple-etc. mfg. plant. $50,000.

Winnipeg—MINING PLANT—Mani-aromium Ltd., c/o J. J. R. Deacon, on Court, mining development plant ential bldgs. $50,000.

Winnipeg—PLANT—Minneapolis Mo-wer Implement Co. of Canada, Ltd., erton St., 15x60x120 ft., and 12x60x128 . Riverton Ave. About $58,000.

Back Bay — FACTORY — Connors e Ltd., Black's Harbour, canning fac-60,000.

Dalhousie—PLANT—N. B. Interna-Paper Co. Ltd., Sun Life Bldg., Mont-le., plant extens.

Moncton—PLANT—Moncton Cold Co., Ltd., 7 Duke St., cold storage $40,000.

Shippegan—PLANT—Gulf Fish & Co. Ltd., Shippegan, cold storage $40,000.

N. S., Halifax—PLANT—Crane, Ltd., Beaver Hall Hill, Montreal, Que., reconstructing plant. $75,000.

Ont., Alexandria—GRIST MILL, etc.—R. J. Graham, 7 Mill Square, 3 story, brick, rein.-con. grist mill and creamery. $40,000.

Ont., Galt—PLANT, etc.—Galt Malleable Iron Co. Ltd., 60 Kerr St., Galt, iron plant and foundry. $40,000.

Ont., Kitchener—PLANT—Cottaplane Mfg. Ltd., c/o G. R. Brock, Kitchener, chemicals, paints, varnishes mfg. plant. $50,000.

Ont., Long Branch (Postal Dist. Toronto)—FACTORY—Lowe Brothers Co. Ltd., 263 Sorauren Ave., Toronto, factory. $75,000.

Ont., North Bay—PLANT—Atlas Firebrick Ltd., North Bay, firebrick, pottery, terra cotta tiles, etc. mfg. plant. $100,000.

Ont., Port Dalhousie—PLANT—Can. Canners, Ltd., Port Dalhousie, plant addn.

Ont., Thorold—PLANT—Essex Packing Co. Ltd., 7 Arthur St., Essex, packing plant and cold storage. $50,000.

Ont., Thorold—PLANT—Owner, c/o Mayor of Thorold, packing plant. $40,000.

Ont., Toronto—PLANT—Apex Cinema Corp. Ltd., c/o Kathleen McCormick, Highland Creek, film mfg. plant. $50,000.

Ont., Toronto—PLANT—Commercial Plastics Products, Ltd., c/o S. Cohen, 465 Bay St., plant. $40,000.

Ont., Toronto — WAREHOUSE — Gair Co. Canada Ltd., 372 Bay St., plans by Krumm, Young & Co. Ltd., 67 Yonge St., engrs.-archts., warehouse, Commissioner St. $75,000.

Ont., Welland — STORAGE — John Deere Plow Co., Ltd., Port Colborne Hy., 1 story storage. $50,000.

Ont., Weston—MILL—S. L. Seed Mills, Ltd., 60 E. Dufferin St., mill bldg.

Ont., Willowdale—PLANT—A. R. Greene Fire Brick Co., Willowdale, plant. $70,000.

Ont., Windsor — PLANT — Thurbois Mines, Ltd., c/o D. Richardson, K. C., Windsor, mining development plant. $100,000.

Que., Montreal—DAIRY—Borden Co. Ltd., 280 Murray St., dairy exten. $40,000.

Que., Montreal—PLANT—Charles Gurd & Co., Ltd., Bleury and Lagauchetiere Sts. W., plans by G. D. Thompson, 2049 McGill College Ave., 27x58x78x88 ft., steel, concrete addn. to 2nd story, soft drink bottling plant, Bleury and Lagauchetiere Sts. W. $99,450.

Que., Montreal—PLANT, etc.—Harrison & Crossfield, Ltd., St. Patrick St., reconstructing plant, warehouse. $75,000.

Que., Montreal—PLANT—Hobb Glass, Ltd., Notre Dame St. W., plastic mfg. plant, St. Patrick St. $50,000.

Que., Montreal — PLANT — Robert Mitchell Co., Ltd., 750 Belair Ave., remodeling part of plant, other imprvs. $40,000.

Que., Montreal—PLANT—Shoe Plastics Ltd., c/o P. C. Casey, 275 W. St. James St., plant. $40,000.

Que., Riviere-aux-Chien—PLANT— Agricultural Distilling, Ltd., 427 St. Vallier St., Quebec, plans by R. Chenevert, 50 Cote du Palais, Quebec, plant addn., alterations. $100,000.

Que., St. Johns—GARAGE, etc.—A. E. Gregoire, 149 Champlain St., garage and repair shop. $100,000.

Que., St. Laurent (Postal Dist. Montreal)—LAUNDRY—Splendid Laundry Ltd., 345 Monkland Blvd., laundry and dry cleaning plant. $40,000.

Que., Three Rivers—PLANT—Canada Packers Ltd., 14 St. Clair Ave., Toronto, Ont., reconstructing recently purchased property and addn. $50,000.

BIDS ASKED

Mass., Southbridge—FACTORY—American Optical Co., 14 Mechanic St., (selected bidders), brick factory addn. to Bldg. 7-L. Over $40,000.

N. C., Marshall—POWER PLANT—French Broad Electric Membership Corp., Marshall, power plant and machinery, etc., Proj. NC 46-G. $150,000. Plans deposit $25. J. B. McCrary Engr. Corp., 22 Marietta St. Bldg., Atlanta, Ga., engrs.-archts. CD 11/9—ENR 11/11, under Public Bldgs.

Pa., Jeannette—PLANT—Pennsylvania Tire & Rubber Co., 1 story, 175x200 ft., brick, steel, rein.-con. rubber plant bldg. Over $40,000. Fletcher Thompson, Inc., 211 State St., Bridgeport, Conn., engrs. CD 11/29.

CONTRACTS AWARDED

Calif., Los Angeles — GRAIN STORAGE BINS—Calif. Milling Co., 1861 E. 55 St., 41 x 90 x 144 ft. grain storage bins, rein.-con., to Jones-Hettelsater Constr. Co., 1021 Baltimore St., Kansas City, Mo. Est. over $40,000.

Calif., Vernon—UTILITY—Aluminum Co. of America, 5151 Alcoa Ave., 2 story, 50 x 150 ft., rein.-con. utility bldg., to McNeill Constr. Co., 5860 Avalon Blvd., Los Angeles. Est. over $40,000.

Conn., East Hartford—FACTORY—Union Drawn Steel Div. Republic Steel Corp., 775 Capitol Ave., Hartford, 1 story, 85x305 ft., tile factory addn., to Hunkin & Conkey Constr. Co., 1740 E. 12 St., Cleveland, O., $170,000.

Md., Baltimore — PLANT—Crown Cork & Seal Co., Eastern Ave. and Kresson St., 1 story, brick, steel addn. to Bldg. 56a, to Frantz Constr. Co., 10 West Chase St., $40,000. Lucius R. White, Jr., 10 West Chase St., archt.

Md., Baltimore — SERVICE, etc. — Rustless Iron & Steel Corp., 1001 Edison Hy., 1 story, bsmnt., rein.-con., brick service bldg., and exten. crane runway and tunnel, etc., to Cummins Constr. Corp., 803 Cathedral St. Est. about $60,000 and $40,000 respectively. O. H. Wight, 803 Cathedral St., archt.

Minn., Parkers Prairie — CREAMERY — Parkers Prairie Co-op. Creamery Assn., Parkers Prairie, 2 story, 29x45 ft., and 1 story, 16x57 ft. creamery addn., to Nelson Bros. Constr. Co., Willmar. CD 6/15—ENR 6/17.

★**N. J., Bayonne**—OIL REFINERY—Tidewater Oil Co., 17 Battery Pl., New York, N. Y., oil refinery consisting new thermofor catalytic cracking unit, etc., to The Lummus Co., 420 Lexington Ave., New York, N. Y., $2,000,000.

★**Ohio**—POWER PLANT—Ohio Power Co., 305 Cleveland Ave. S.W., Canton, power plant, to Sollitt Constr. Co., South Bend, Ind. $2,000,000. Awarded 11/27.

Pa., Logansport—BOILER HOUSE, etc.—Logansport Distilling Co., 1 story, brick, steel boiler house and general alterations to distillery, to J. M. Baldwin, Whitfield Bldg., Pittsburgh. Est. $40,000. L. V. Abbott, 2321 S. Brook St., Louisville, Ky., archt. in charge.

Pa., Schenley—DRYHOUSE, etc.—Joseph S. Finch Co., Inc., Schenley, 2 story, 58 x 65 ft., rein.-con., brick dryhouse, incl. atmospheric drum dryers, rotary steam tube dryers, pumps, tanks, evaporators, conveyor equip., 1 story, 40 x 60 ft. precast concrete, reinforced deck, boiler house, incl. 800 hp. high pressure boiler, to Groomes Constr. Co., Springdale. CD 11/23—ENR 11/25.

★**Texas**—PLANT—Celanese Plant Corp. of America, 180 Madison Ave., New York, N. Y., chemical mfg. plant, to Gasoline Plant Constr. Corp., Second National Bank Bldg., Houston, approx. $5,000,000. CD 12/2.

Tex., Donna—PLANT—Donna News-Advocate, Donna, newspaper plant, separate contracts. Approx. $40,000.

★**Wash., Seattle**—CAFETERIA, etc.—Boeing Aircraft Co., Georgetown Station, Zone 14, cafeteria and food service bldg., to Western Constr. Co., Arctic Bldg., Zone 4. Est. $750,000. Bids 11/20. The Austin Co., Dexter Horton Bldg., Cleveland, O., engrs. and archts. CD 11/22—ENR 11/25.

Wis., Cudahy—FEED WAREHOUSE—M. Hartean & W. J. LaCourt, c/o Cudahy Bros. Co., Cudahy, 1 story, 90x120 ft., concrete block feed warehouse, concrete fdn., to Meredith Bros., Inc., 121 E. Washington St., Milwaukee. L. E. Peterson, 312 E. Wisconsin Ave., Milwaukee, Zone 2, engr.

Wis., Fond du Lac—WAREHOUSE—Sadoff Iron & Metal Co., 235 W. Arndt St., 1 story, part bsmnt., 81x106 ft., brick, concrete warehouse, to Immel-Mable Co., 101 S. Main St. F. J. Stepnoski & Son, 104 S. Main St., archts.

Ont., Niagara Falls—PLANT—Lionite Abrasives, Ltd., 21 Stamford St., plant addn., to Smith Bros. Constr. Co. Ltd., 1740 Ellen St. Architect c/o A. J. Burnell, 1280 Portage Rd.

Ont., Toronto — PLANT — Canada Packers Ltd., 2220 St. Clair Ave. W., addnl. story to hog killing bldg., and altering lower floors, to Ramsay Contracting Co. Ltd., 39 Indian Rd., $40,000.

Que., Beauharnois—PLANT—Aluminum Co. of Canada, Ltd., Sun Life Bldg., Montreal, plant addn., dust collecting and furnace rooms, shipping warehouse, coke storage platform, screening rooms, etc., to Anglin-Norcross, Ltd., 892 W. Sherbrooke St., Montreal. Est. $150,000. CD 11/18—ENR 11/25.

Que., Montreal—MACHINE SHOP—Associated Machinists Reg., 5608 Charlemange St., machine shop, to H. H. Schank, 7 Principal St., Calumet.

Que, Montreal—GARAGE—McRobert Spring Service, 291 McCord St., repairing, constructing garage addn., to Walter G. Hunt & Co. Ltd., 1405 Bishop St., $40,000.

Que., Montreal—OIL REFINERY—Shell Oil Co. Ltd., 660 W. Ste. Catherine St., oil refinery exten., to Can. Kellogg Co. Ltd., 660 W. Ste. Catherine St. Est. $100,000.

Que., St. Joseph de Sorel (Postal Dist. Sorel)—FACTORY—Wood Preservation Industries, Ltd., 552 MacEacherns Ave., Montreal, wood products creosoting factory, to E. Cournoyer, St. Joseph de Sorel.

Que., St. Laurent (Postal Dist. Montreal)—POWER PLANT—Foundation Co. of Canada, Ltd., 1538 Sherbrooke St. W., Montreal, power plant, to Averst McKenna & Harrison, Ltd., 485 McGill St., Montreal, about $84,000.

Proposal Advertisements see p. 24

OFFICIAL PROPOSALS

RATE: THE RATE FOR OFFICIAL PROPOSAL ADVERTISING IS 50 CENTS PER LINE (OR FRACTION) PER INSERTION
COPY RECEIVED UP TO 10 A.M. TUESDAY FOR ISSUE OUT THURSDAY SUBJECT TO SPACE OPEN FOR LAST MINUTE ADS
SEND COPY TO OFFICIAL PROPOSAL DIVISION, ENGINEERING NEWS-RECORD, 330 W. 42ND ST., NEW YORK, N. Y.

OFFICIAL PROPOSALS

Bids: December 21, 1943 (295)

Storm Sewer

NOTICE TO CONTRACTORS
WAR PUBLIC WORKS PROJECT,
NO. N. Y. 30–248
NASSAU COUNTY CONTRACT NO. 801–K
COUNTY OF NASSAU

Sealed bids for construction of storm sewer for Horse Brook Drain, East Branch, from Fulton Street, Hempstead, northerly to Stewart Avenue, Garden City, Nassau County, New York, will be received by the County Executive of Nassau County, in the Chambers of the Board of Supervisors, First Floor, Old County Court House, Franklin Avenue, Mineola, New York, at 10:30 o'clock A.M., E.W.T., December 21st, 1943, and then at said Chambers of the Board of Supervisors, publicly opened and read aloud.

The information for Bidders, Form of Bid, Form of Contract, Plans, Specifications and Form of Performance Bond may be examined at the Office of the Nassau County Commissioner of Public Works, Second Floor, Old County Court House, Franklin Avenue, Mineola, New York, and copies thereof obtained upon payment of $10.00 for each set. THIS MONEY WILL NOT BE REFUNDED.

The County of Nassau reserves the right to waive any informalities in or to reject any of all bids.

Each bidder must deposit with his bid security in the amount of $3,000.00 in the form and subject to the conditions provided in the Information for Bidders.

The successful bidder will be required to furnish a surety performance bond in a sum at least equal to 100% of the contract price.

Attention of bidders is particularly called to the requirements as to conditions of employment to be observed and minimum wage rates to be paid under the contract.

No bidder may withdraw his bid within Forty-five (45) days after the actual date of the opening thereof.

By Order of
J. RUSSEL SPRAGUE,
County Executive.
By: CHARLES F. STROHSON,
Clerk.

December 6, 1943.

EMPLOYMENT OPPORTUNITIES

RATE: 10 CENTS A WORD, MINIMUM CHARGE $2.00

Positions Wanted (full or part time individual salaried employment only), ½ the above rates, payable in advance.

Box Numbers in care of any of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.

Discount of 10% if one payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

Copy for new advertisements received until 10 A. M. Friday for following Thursday's issue

WANTED

ROCK DRILL ENGINEER

Experienced Rock Drill Engineer for Design and Development Work. Permanent Position in the East with Good Opportunity for Advancement. State Salary Expected. All Replies Will Be Held Confidential.

P-981, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

POSITION VACANT

These Positions Vacant advertisements are published subject to agreement by the advertisers not to consider applicants now employed on war work unless they obtain written release from present employer.

SUPERINTENDENT OR GENERAL FOREMAN with estimating experience on buildings, Sewers and Paving Projects in Iowa and Illinois. Permanent connection for the proper man. Give age, education, experience, salary expected, reference and draft status in first letter in own hand writing. Enclose recent photograph. P-31, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

STRUCTURAL DESIGN ENGINEER. Graduate C.E. Age 40, 18 years experience design and detail structural steel, concrete and timber structures such as Shipways, Docks, Quays, Industrial and Commercial Buildings. Capable of taking charge of all structural design and specifications for a complete project. PW-11 Engineering News-Record, 68 Post St., San Francisco 4, Cal.

CONTRACTOR'S SUPERINTENDENT-MANAGER, extensive experience in commercial, industrial and housing construction. Well recommended. Anywhere S or SW preferred. PW-16, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

OPERATING ENGINEER: Mainly Construction of Highway Paving Concrete—Asphalt. Will accept national or international position. Available after December 2nd, 1943. PW-27, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ESTIMATOR AND CONSTRUCTION SUPERINTENDENT with 23 years experience on all types of construction. Will travel. Joseph De Rose, 1429 Ferris Place, Bronx, 61, New York.

POSITIONS WANTED

ASSISTANT PROFESSOR of Civil Engineering; Assoc. M. Am. Soc. C. E.; 33 M. S. C. E., 5 years surveying, mapping, stream-gaging, highway and building construction, road and sewer design; 3 years teaching highways, surveying, hydraulics, curves. Available upon proper notice. PW-51, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

GENERAL FOREMAN 25 years experience sewers, water lines, foundations, grading roads, heavy timber work and concrete. PW-49, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

CIVIL ENGINEER graduate 34 years experience; design and construction; water supply; industrial plants; power plants; hydro-electric developments. PW-50, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

WALLACE E. BELCHER. Designing—Supervising Engineer. Industrial, Public Utility, Railroad experience. Services available immediately. 5900 Woodbine Avenue, Philadelphia 31, Pa.

SUPERINTENDENT OR GENERAL FOREMAN, 30 years experience. Heavy grading, dams, dikes, Rail Road construction. Concrete and Black Top Pavement of all types, and heavy foundation work. Any location. PW-52, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

SHOVEL & CRANE OPERATOR. 19 years experience. Also do all repair work on Diesel and Gas Motors. PW-47, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

CIVIL ENGINEER. Registered, Graduate C.E. and E.E., Assoc. M. Am. Soc. C. E., eight years experience on Roads, Bridges, Buildings. Surveys. Water Supply, Drainage, Office and cost work. Wants Foreign Job Requiring Trust and ability, with Post War Future. Now employed, but available at once. Write P. O. Box 2214, Noble Sta., Bridgeport 8, Conn.

DRAFTSMAN—Structural experience. Vack, 2809 So. Drake Ave., Chicago, Ill.

CHIEF INSPECTOR for Architect-Engineer. Large war plant experience with nationally known architects. Could bring compact force to handle any kind of construction. Available December 10. PW-38, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

MECHANICAL ENGINEER desires position where initiative and ingenuity may be exercised. Stress analysis, piping flexibility design, pressure vessel design, and drafting experience. Will consider any type of engineering. Free to travel. Single, 26 draft exempt. PW-34, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

MASTER MECHANIC, back from C. Z. desires employment anywhere outside U. S. Experience Installing new machinery. Opper. machine shop. Maintenance of bulldozers, shovels, mixers, compressors, and welding machines. PW-48, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

CONSTRUCTION ENGINEER—ME-CE age 42, now closing-out Navy contract, available Dec. 10th. 18 years experience general Construction. Chief operations on Air Fields, Ordnance Plants, Internment Camps, Army Hospitals, Commercial and Industrial Plants, Shipyards and Dry-Docks. Thoroughly grounded in Government procedure. Producting Engineering on Plant Expansion and Operations. Draft classification 1A (H). PW-33, Engineering News-Record, 68 Post St., San Francisco 4, Cal.

ENGINEER DESIRES POSITION. 25 years experience, 3 years U. S. Navy. Design, Estimating. Cost Estimating. Inspection. PW-53, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

CONSTRUCTION SUPERINTENDENT with over twenty-five years experience on all kinds of work including defense housing, now available, will leave town. Well recommended, good executive not afraid of hard work. Take complete charge or assist general superintendent. PW-42, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

MASTER DIVER: Available now. With or without gear. 20 years experience on all phases of underwater work. Reliable references if desired. Capable of taking charge of job. Go anywhere. PW-54, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

WORK WANTED

EQUIPPED SURVEY PARTIES for all types of surveyor construction work. Any location. Harwood, 258 Broadway, New York City. NEWS-REC.—9063—Undisplayed